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CONTENTS.

The whole of the literary matter in THE LANCET is copyright.

THE MILROY LECTURES on Paratyphoid Fever and Meat Poisoning. Delivered before the Royal College of Physicians of London by F. A. BAINBRIDGE, M.A., M.D. Cantab., F.R.C.P. Lond., D.P.H., Professor of Physiology, University of Durham. —Lecture II. 771

SIX HUNTERIAN LECTURES (Abstract of), on Certain Phases in the Evolution of Man. Delivered before the Royal College of Surgeons by ARTHUR KEITH, LL.D., M.D. Aberd., F.R.C.S. Eng., Conservator of the College Museum. 775

ORIGINAL ARTICLES.

Feeble-mindedness and the Measurement of the Intelligence by the Method of Binet and Simon. By W. C. SULLIVAN, M.D.R.U.I., Medical Officer in H.M. Prison Service 777

Pharyngeal Suppuration: Course and Direction of Various Types. By GEORGE W. BADGEROW, F.R.C.S. Edin., Surgeon to the Throat Hospital, Golden-square, London 780

A Case of Acute Myelitis with Optic Neuritis (Neuromyelitis Optica). By ERNEST F. CLOWES, M.R.C.S. Eng., L.R.C.P. Lond. 782

Decorative Surgery. By W. H. BATTLE, F.R.C.S. Eng., Surgeon to St. Thomas's Hospital.—(*Illustrated*) 784

A Case of Pharyngeal Diverticulum. By E. B. WAGGETT, M.A., M.B., B.C. Camb., Surgeon to the Nose, Throat, and Ear Department, Charing Cross Hospital; and EDWARD D. DAVIS, M.R.C.S. Eng., L.R.C.P. Lond., Assistant to the Nose, Throat, and Ear Department, Charing Cross Hospital.—(*Illustrated*) 786

The Dietetic Treatment of Diabetes. By P. J. CAMMIDGE, M.D. Lond.—(*Illustrated*) 788

The Immediate Results of Sanatorium Treatment Contrasted with the Results Obtained by a Combined Sanatorium and Tuberculin Treatment. By J. A. D. RADCLIFFE, M.B. R.U.I., Pathologist, King Edward VII. Sanatorium, Midhurst 791

Acute Intestinal Obstruction Caused by the Appendix Vermiformis, the Obstruction Obscuring an Acute Appendicitis. By E. GILLESPIE, M.B. Glasg., F.R.C.S. Eng., Assistant Surgeon, Prince of Wales's Hospital, N.—(*Illustrated*) 792

Crawford Williamson Long, the Pioneer of Anæsthesia. By DUDLEY W. BUXTON, M.D., B.S., M.R.C.P., Anæsthetist to University College Hospital and Lecturer on Anæsthetics in University College Hospital Medical School.—(*Illustrated*).—(*Concluded*) 816

MEDICAL SOCIETIES.

ROYAL SOCIETY OF MEDICINE:
SURGICAL SECTION:—Pancreatic Calculus removed by Operation 793
SECTION OF ANÆSTHETICS:—Ether and Hedonal Infusion Anæsthesia 794
OTOLOGICAL SECTION:—The Value and Significance of Hearing Tests 795
CHELSEA CLINICAL SOCIETY: Disorders of the Circulatory System 796
EDINBURGH MEDICO-CHIRURGICAL SOCIETY: Discussion on the Treatment of Simple Fractures 797
NEW LONDON DERMATOLOGICAL SOCIETY: Exhibition of Cases, &c. 798
HARVEIAN SOCIETY: Hypochondriasis, its Significance and Treatment 798
LIVERPOOL MEDICAL INSTITUTION: Estimation of the Calcium Metabolism 799
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Handbuch der Pathogenen Mikroorganismen. Herausgegeben von Dr. W. Kolle und Dr. A. von Wassermann 804
Shop Slavery and Emancipation. By William Paine 805
Heredity in Relation to Evolution and Animal Breeding. By W. E. Castle 805
A Practical Hygiene 805
Practical Chemistry for Medical Students 805
Experiments in General Chemistry 805
Experimental General Chemistry 805
A Handbook of Physics and Chemistry. Fourth edition 805
A Manual of Physics 806
Notes on Practical Physics 806
Elementary Experimental Chemistry 806
Elementary Quantitative Analysis 806
A Handbook of Organic Analysis 806

NEW INVENTIONS.

The "Hyposol" Ampoule Syringe.—(*Illustrated*) 806
A Nipple Shield.—(*Illustrated*) 806

LEADING ARTICLES.

THE NATIONAL INSURANCE ACT: AN INDICTMENT 807
SURGERY IN THE MIDDLE AGES 807
THE NOMENCLATURE OF DISEASES 808

ANNOTATIONS.

The Strike Bill 809
The Attempt on King Victor Emanuel's Life 810
Feeble-mindedness and the Measurement of the Intelligence by the Method of Binet and Simon 810
Amœbic Dysentery in Great Britain 811
Shyness 811
The Pest-hole of the Pacific 812
Presentations to Professor P. W. Latham 812
Sunshine and Rainfall for 1911 .. 813
The Poisons Schedule 813
John Bellers 814
The Chemistry of the Boot 814
Epigastric Hernia a Cause of Chronic Diarrhœa 814
Colonial Pharmacists and Reciprocal Agreements 815
The Nature and Treatment of Diabetes 815

VITAL STATISTICS:
Health of English Towns 823
Health of Scotch Towns 823
Analysis of Sickness and Mortality Statistics in London during the year 1911 824
Vital Statistics of London during 1911 825

SPECIAL ARTICLES.

The Final Report of the Royal Commission on Vivisection .. 818
Medico-Psychological Association of Great Britain and Ireland 821
Royal College of Surgeons of England 822
The Services 826
Manchester: A Curious Compensation Case.—Hospital Saturday Fund 832
Birmingham: The University.—General Hospital: Retirement of St. Thomas Chavasse 833
Scotland: Scotland and the National Insurance Act.—Stricken Hospital Affairs: Official Inquiry 833
Ireland: The National Insurance Act.—The Provision for "Sanatorium Benefit" in Belfast 834
Paris: Election at the Academy of Sciences 835
Vienna: A Tribute to the Memory of Lord Lister 836
Italy: Alessandro Codivilla.—The Guido Baccelli Ambulance at Tripoli 837
Constantinople: The New Austro-Hungarian Hospital ... 837
United States of America: The Substitution of Saccharine for Sugar in Prepared Foods Prohibited 838

CORRESPONDENCE.

Museum of the Royal College of Surgeons of England (Prof. Arthur Keith) 828
The Causation of Toxic Symptoms following the Administration of Salvarsan (Dr. J. McIntosh, Dr. P. Fildes, and Mr. H. Dearden) 828
The Intestinal Flora (Dr. A. Distaso) 829
The Value of Pneumococcus Vaccine in the Treatment of Pneumonia (Dr. Nathan Raw) 829
A New Galactogogue (Dr. W. Lauzun-Brown) 830
Fungi found in Tropical Bronchomycosis (Dr. Robert Craik) 830
The Bed Isolation of Cases of Infectious Disease (Dr. F. G. Crookshank) 830
Cavitation of the Lungs in Young Infants (Dr. Theodore Fisher) 831
The Medical Profession and the National Insurance Act (Dr. B. Hall, Dr R. Haldane Cook, Mr. George Brown) 831
Income-Tax and the Medical Profession (The Income Tax Adjustment Agency, Ltd.) ... 844
An Interesting Fact (Mr. A. C. Butler-Smythe) 844
"606" in Bilharziosis 844
Venerable Verities (Sir James Sawyer) 845

OBITUARY.

Sir Richard Brayn, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A. 839
Deaths of Eminent Foreign Medical Men 839

MEDICAL NEWS.

An Ophthalmologist's Gift to his Old Clinic 776
Central Midwives Board 783
Royal Free Hospital 792
Extension of Chester Infirmary 800
Bristol General Hospital 815
Pharmacists and Copies of Prescriptions 825
University of Liverpool 827
The Cremation Society of England 837
Donations and Bequests 838
Pass-lists of the Royal College of Surgeons of England and the University of Bristol ... 839
Foreign University Intelligence 839
Princess Alice Memorial Hospital, Eastbourne 839
Seventeenth International Congress of Medicine (London, 1913) 840
Literary Intelligence 840
Hunterian Society 840
Chelsea Hospital for Women ... 840
National Insurance Act 840

PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics 840
House of Commons 841

Books, &c., received 842
Appointments 843
Vacancies 843
Births, Marriages, and Deaths .. 844
Notes, Short Comments, and Answers to Correspondents .. 844
Medical Diary 846
Acknowledgments of Communications received 848

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX

MEDICAL AND OTHER BOOKS AND PUBLICATIONS

ADLARD & SON:— PAGE
Fenwick .... Indications for Widely Resecting the Bladder Walls .. .... Cover 1
Gilford..... Disorders of Post-Nasal Growth, &c. .. Cover 1

BAILLIERE, TINDALL & COX:—
Bidwell .... Intestinal Surgery 7
Clarke, E. .. Errors of Accommodation and Refraction of the Eye .... Cover 1
Gardner .... Surgical Anæsthesia ..... Cover 1

CAMBRIDGE UNIV. PRESS:—
Biometrika 8

CASSELL & CO:—
Herman .... Diseases of Women 5
Morris, Sir M. .... Diseases of the Skin .. 7

CHURCHILL, J. & A.:—
Bailey & Miller .... Embryology 5
Cripps ..... Ovariotomy, &c. 7
Fenwick .... The Value of Radiography..... Cover 1
Goodhart & Still ..... Diseases of Children .. 5
Jellett ..... Midwifery 5
,, ... Gynæcology 5

CHURCHILL.—(Continued). PAGE
Latham .... Dictionary of Medical Treatment 5
Lewis ..... Medical Vade-Mecum.. 5
Lucas ..... Practical Pharmacy.... 5
,, ... Dispensing 5
,, ... Prescriptions 5
,, ... Receipts 5
Morris ..... Anatomy 5
Notter & Firth..... Hygiene..... 5
Parsons .... Diseases of the Eye 5
Rushy ..... Manual of Structural Botany 5
Thorne, Besly..... Schott Nauheim Treatment, &c., of the Heart 8

FROWDE AND HODDER & STOUGHTON:—
Bidwell .... Minor Surgery 7
Lockwood .. Aseptic Surgery..... 8
,, .. Clinical Surgery 8

GLAISHER:—
Herschell .. Chronic Affections of the Stomach ..... Cover 1
Savill ..... Hysteria ..... Cover 1
,, ... Neurasthenia ..... ,, 1
West ..... Granular Kidney and Physiological Albuminuria..... 7

HEINEMANN:—
Burnet .... Microbes and Toxins .. 8

LEWIS:— PAGE
Journal of Vaccine Therapy .. Cover 1
Lewers..... Diseases of Women 7
,, ... Cancer of the Uterus .. 7
Moullin .... Enlargement of the Prostate ..... Cover 1
Tilley ..... Diseases of the Nose, &c. ..... Cover 1

MACLEHOSE & SONS (GLASGOW):—
Barr & Barr. Diseases of the Ear .. 7
Macewen, Sir W. .... Growth of Bone..... 8

MACMILLAN & CO.:—
Lockwood .. Appendicitis..... 8
Milligan & Wingrave.. Handbook of Diseases of the Ear .... Cover 1

MEDICAL PUBLISHING CO.—
Lane ..... Operative Treatment of Fractures 8
,, ... Cleft Palate and Hare Lip 8

NISBET & CO.:—
Lane ..... Treatment of Chronic Constipation 8

SAUNDERS COMPANY:—
Davis ..... Operative Obstetrics .. 5
Fenwick .... Dyspepsia ..... Cover 1

SAUNDERS.—(Continued). PAGE
Mayo, &c. .. Collected Papers 3
Sanders .... Modern Methods in Nursing..... 3
Saunders' New Books ..... Cover 1
Scudder .... Tumours of the Jaws.. 3

THE LANCET:—
Territorial Medical Service 8

WRIGHT & SONS (BRISTOL):—
Alderson .... Dental Anæsthetics 8
French ..... Index of Differential Diagnosis .... Cover 1
Lejars' Urgent Surgery 6
Love ..... The Deaf Child..... 6
Medical Annual 1912 7
Short..... New Physiology, &c. .. 6
Smith ..... Lateral Spinal Curvature and Flat Foot, &c. ..... Cover 1
Warwick & Tunstall .. First Aid to Injured.... 6

MEDICAL LIBRARIES, &c.:—
Baker, Birmingham—
Book Bargains 8
Beasley & Keiley—
Stammering 8
Fenwake—
Stammering 8
Matthews Bros.—
Wood: Application of Trusses.... 8
Squire's Pocket Companion, &c..... 34

OFFICIAL AND GENERAL ANNOUNCEMENTS

APPOINTMENTS VACANT:—
Agra Dufferin Hospitals and Female Medical School..... 67
Bedford County Hospital 69
Birmingham and Midland Eye Hos. .. 67
Bradford Children's Hospital 67
Bristol Eye Hospital..... 70
Burnley Union..... 69
Cancer Hospital, Fulham-road..... 70
Carlisle Non-Provident Dispensary .. 67
Children's Hospital, Sunderland 69
City of Birmingham Education Committee 69
Coventry and Warwickshire Hospital 68
Darlington Hospital and Dispensary.. 69
Devonshire Hospital, Buxton..... 67
Dewsbury and District General Infirmary 68
Dreadnought Hospital, Greenwich .. 68
Evelina Hospital for Sick Children .. 67
Guest Hospital, Dudley..... 67
Huntingdon County Hospital 70
Jersey Poor House and Infirmary 67
Kensington and Fulham General Hospital 69
Kesteven County Asylum, Sleaford 70
Kingseat Asylum, Aberdeen..... 68
Leicester Infirmary 70
London County Asylum, Coulsdon .. 70
London Hospital 70
Loughborough and District General Hospital 66
Macclesfield General Infirmary 70
Manchester Royal Infirmary 69
Merthyr Tydfil Union Workhouse.... 69
Norfolk and Norwich Hospital 69
North Lonsdale Hospital, Barrow-in-Furness 68
North Riding Asylum, Clifton..... 68
Poplar Hospital for Accidents..... 68
Preston Royal Infirmary 68
Queen Charlotte's Lying-in Hospital.. 70
Royal Berkshire Hospital, Reading .. 69
Royal Ear Hospital, Soho 69
Royal Free Hospital, Gray's Inn-road 72
Royal Hospital for Diseases of the Chest 68
Royal Infirmary, Sunderland 67
Royal Portsmouth Hospital 69
Royal Victoria Eye and Ear Hospital, Dublin..... 70
St. Bartholomew's Hospital 69
Salford Royal Hospital 69
Salop Infirmary, Shrewsbury 67
Sheffield Royal Hospital..... 70
Sheffield Royal Infirmary 67
Singapore Municipality Infectious Diseases Hospital 68
Staffordshire General Infirmary 67
Stockport Infirmary..... 70
Teignmouth Hospital 68
Tynemouth Union..... 68
University of Sheffield..... 67
Walsall and District Hospital..... 69
Western General Infirmary, Marylebone-road 68
West Herts Hosp., Hemel Hempstead. 67
West London Hospital and Post-Graduate College 69
West Suffolk General Hospital, Bury St. Edmunds 70
Wolverhampton and Staffordshire General Hospital 67 70

ASSISTANCIES, MEDICAL..... 70

ASYLUMS HOMES, &c.:—
Ashwood House, Kingswinford 60
Association of Medical Men Receiving Resident Patients 66
Barnsley Hall, Bromsgrove 60
Barnwood House Hospital 61
Bishopstone House, Bedford 60
Brunton House, Lancaster..... 66
Buntingford House Retreat, Buntingford 65
Camberwell House, Peckham-road.... 66
Cheadle Royal 60
Clarence Lodge, Clapham-park 61
Coltthurst House, Warford..... 66
Coppice, The, Nottingham..... 61
Crookabury Sanatorium, Surrey..... 59
Dalrymple House, Rickmansworth 59
David Lewis Colony, Alderley Edge .. 66
Dinsdale Park, Darlington 61
Dr. Gurardoe Sanatorium 65
Dr. E. Rosenberg Sanatorium 65
Farnham House, Dublin..... 62
Ghyllwoods 63
Grove House, Church Stretton..... 61
Grove, The, Catton, Norwich 61
Haydock Lodge, Newton-le-Willows .. 62
Heigham Hall, Norwich 60
Home for Epileptics, Maghull..... 66
Inverclen Sanatorium, Cupar..... 66
Inverurith Lodge Sanatorium, Colinsburgh 65
Kingsdown House, Box 60
London Fever Hospital 60
London Open-Air Sanatorium, Wokingham 64
Malling Place, Kent 61
Malvern Hydropathic 66
Manna Mead, Blackheath 66
Maryville, Dublin 62
Melbourne House, Leicester 70
Meyrick, Harrow Weald..... 66
Middleton Hall, Co. Durham 60
Moat House, Tamworth 61
Mount Pleasant, Wanstead..... 66
Newmains Retreat, Lanarkshire 66
Nordrach in Wales Sanatorium 64
Nordrach-on-Dee, Banchory 64
Nordrach-upon-Mendip Sanatorium .. 64
Northlands Retreat, Wandsworth 59
Northumberland House, Finsbury-park 60
Northwoods House, Winterbourne..... 62
Norwood Sanatorium, Ltd. 63
No. 610, L.O., Strand..... 66
No. 655, L.O., Strand..... 66
No. 659, L.O., Strand..... 66
No. 665, L.O., Strand..... 66
No. 666, L.O., Strand..... 66
Open Island, Heybridge 63
Otto House, West Kensington 66
Painswick Sanatorium 59
Peckham House 62
Plympton House, South Devon 61
Portsmouth Corporation Mental Hospital 61
Rusbury Sanatorium, Northallerton.. 59
St. Andrew's Hospital, Northampton. 61
St. Luke's Hospital, E.C. 60
Sanatorium Clavadel..... 64
Springfield House Private Asylum, Bedford 61
Stocker, Craven-street 66

ASYLUMS.—(Continued) PAGE
Stretton House, Church Stretton..... 61
The Grange, Rotherham 60
The Picasaunce, York 61
Vale of Clwyd Sanatorium..... 65
Warneford Asylum, Oxford..... 60
Westcliff Nursing Institution 66
Wiesbaden, 30, Parkstrasse 65
Wye House, Buxton 61
Yarrow Convalescent Home, Broadstairs..... 62

FINANCIAL, &c.—
Equitable Reversionary Interest Soc. 58

HEALTH RESORTS, BATHS, &c.:—
Buxton Hydro Hotel..... 65
Passugg..... 65
St. Joachimsthal..... 65
Smedley's, Matlock 66
Woodhall Spa Baths, &c. 64

HOTELS:—
Hotel Metropole, Las Palmas 65
White Hart Hotel, Margate 65

HOUSE & ESTATE AGENTS:—
Balmoral, Leigh 72
Bedford & Co., Wigmore-street 72
Burrows, Ashford 72
Elliott, Son & Boyton, Vere-street .. 72
Ley Clark, Wimpole-street 72
No. 618, L.O., Strand..... 72
CONSULTING-ROOMS:—
Elliott, Son & Boyton, Vere-street .. 72
No. 665, L.O., Strand..... 72
No. 666, L.O., Strand..... 72

LIFE & FIRE ASSURANCES:—
General Life Assurance Co. 58
Prudential 58

MASSAGE:—
London School of Massage..... 58

MEDICAL ACCOUNTANTS, &c.:—
Davis 71
Turner 71

MEDICAL AGENTS:—
Blundell & Rigby 73
Fieldhall, Limited 76
Manchester Clerical, &c., Association. 75
Manchester Medical Agency 75
Medical Agency 76
Needes, Herbert 76
Needes, J. C. 73
Peacock & Radley 76
Scholastic, Clerical, &c., Assoc. 75
Turner 74

MEDICAL SCHOOLS:—
(LONDON)
West London Post-Graduate College.. 56

MEDICAL SCHOOLS.—(Continued) PAGE
(PROVINCIAL, &c.)
Edinburgh University Residential Medical College 57

NURSING INSTITUTES:—
Army and Navy Male Nurses' Co-operation 56
General Nursing Association..... 56
Hospital for Sick Children, Great Ormond-street 56
Leeds Trained Nurses' Institution 56
London Nurses' Association 56
Male Nurses Temperance Co-operation 56
Mental Nurses' Co-operation 56
National Hospital Male Nurses' Association 56
Nurses' Co-operation, Portland-place 56
St. John's House 56
St. Luke's Hospital, E.C. 56
Temperance Male Nurses' Co-operation 56
The Retreat, York..... 56

OFFICIAL NOTICES:—
City of London Lying-in Hospital.... 56
Demonstration of Lieut. Muller's System of Home Exercise without Apparatus 57
Educational Institute of Scotland..... 57
London School of Clinical Medicine.. 56
Medical Graduates' College and Polyclinic 56
Oxford Eye Hospital..... 56
Queen Charlotte's Lying-in Hospital. 56
Royal College of Physicians of Edinburgh, &c. 57
Royal College of Physicians of London 56
Royal Society of Medicine .... Cover 1
Tancred's Charities..... 56
Theodore Williams Medical Scholarship 57
University of Cambridge 57
University of Durham College of Medicine, Newcastle-upon-Tyne .. 57
University of Manchester 56
University of Wales 57
West End Hospital for Diseases of Nervous System 56

PARTNERSHIPS & PRACTICES:—
Arnold & Sons, Gillespur-street 71
Manchester Clerical, &c., Assn. 72
Medicus, Bristol 72
No. 662, L.O., Strand..... 72
No. 664, L.O., Strand..... 72
No. 670, L.O., Strand..... 71
No. 674, L.O., Strand..... 71
Pitt, Brist J. 72
Scholastic, Clerical, &c., Association.. 71
Turner, Adam-street..... 71
44, Union-street, W. 72

RAILWAY & STEAMSHIP CO.'S
New Zealand Shipping Co..... 56
R.M.S.P.—
Yachting Cruises de Luxe 56

TUTORS & LECTURERS:—
Med. Corres. Coll. 58
No. 449, L.O .. 72
Scholastic 8
Weymouth 69

For Index to Trade and Miscellaneous Advertisements see page 4.

The Milroy Lectures

ON

PARATYPHOID FEVER AND MEAT POISONING.

Delivered before the Royal College of Physicians of London

BY F. A. BAINBRIDGE, M.A., M.D. CANTAB., F.R.C.P. LOND., D.P.H.,

PROFESSOR OF PHYSIOLOGY, UNIVERSITY OF DURHAM.

LECTURE II.[1]

Delivered on March 5th.

PARATYPHOID (B) FEVER.

MR. PRESIDENT AND GENTLEMEN,—Comparatively few cases of illness caused by this organism have been recorded in England, although it has been calculated by Boycott that each year in London nearly a hundred cases of clinically enteric fever might be expected to be paratyphoid (B) fever. Several large epidemics and many isolated cases have been described in Germany, and the disease also appears to be prevalent in America and in France.

A small epidemic of 14 cases in Malta has recently been described by Babington; in seven of them the diagnosis was established by blood cultures. It is doubtful whether it occurs, and in any case it seems to be rare, in India and also in South Africa. It is difficult to form an opinion as to the actual prevalence of paratyphoid fever as compared with enteric fever; but the observations of Boycott indicate that in England about 3 per cent. of the cases which run the clinical course of enteric fever are really paratyphoid fever.

From the observations of Klinger, Fischer, and others in Germany, it would appear that the proportion of paratyphoid cases as compared with enteric fever cases is from 8 to 10 per cent.; and a statement by Wells (quoted by Boycott) indicates that about 10 per cent. of the enteric cases occurring in Chicago are really paratyphoid (B) fever. Practically nothing is known as to its seasonal prevalence. Of 10 cases recorded in England 1 occurred in January, 1 in March, 1 in July, 3 in August, 1 in September, and 3 in November. In a recent outbreak of 14 cases in Malta 12 were admitted to hospital in August and September.

DISTRIBUTION OF B. PARATYPHOSUS (B).

The bacillus is very rarely found in man except in patients suffering from paratyphoid (B) fever or in persons who have recently had an attack of paratyphoid (B) fever and are acute or chronic carriers. Savage, for example, examined the stools of a large number of healthy men and of typhoid patients without finding this organism. Bainbridge and O'Brien also carefully searched for it in the excreta of some 300 convalescent enteric cases without finding it on a single occasion. Indeed, this bacillus has practically never been found in England except in cases of illness clinically indistinguishable from enteric fever. English writers consider, therefore, that it occurs only in persons suffering from paratyphoid (B) fever (that is, an illness resembling enteric fever) or in those who have become carriers as a sequel of such an illness.

This view has been challenged by Conradi and by Hübener, who hold that the isolation of B. paratyphosus (B) from the blood or stools of a human being does not in the least indicate (in the absence of other evidence) that he has, or has had, paratyphoid fever. Their opinion is based upon observations as to the distribution of this bacillus in nature. Conradi found organisms described as "paratyphoid" bacilli in 29 out of 250 typhoid convalescents, in patients suffering from tuberculosis, and in healthy people.

Prigge and Sachs-Müke, who examined the stools of 5252 individuals, found "paratyphoid" bacilli in 60 cases apart from those actually suffering from paratyphoid fever. Similar bacilli have been obtained also by Hübener and others from sausages, meat, milk, and water; and Conradi noticed that food containing these bacilli could be consumed by human beings without ill-effect. They are disposed, therefore, to regard "paratyphoid" bacilli as harmless saprophytes widely distributed in man; but Conradi finds it difficult to account for their occasional lapses into virulence. These observations have been subjected to severe criticism.

In the first place, none of the bacilli appear to have been examined by either the absorption method or the complement deviation method, and there is no conclusive evidence that the organisms isolated by these observers were really B. paratyphosus (B). In some cases it is certain that they were not B. paratyphosus (B), since several strains described by them as "paratyphoid" bacilli when examined by the absorption method proved to be B. suipestifer.

Secondly, the evidence that these so-called "paratyphoid" bacilli even belong to the Salmonella group at all is at times incomplete. Some German writers apparently do not recognise that the human alimentary canal frequently contains bacilli which superficially resemble those of the Salmonella group, but which can be distinguished from them by adequate cultural tests and which are not agglutinated by paratyphoid (A) or (B), suipestifer or enteritidis (Gaertner) sera.

The existence of such organisms has been clearly demonstrated both by Morgan, by Savage, and by Bainbridge and O'Brien. In the course of his investigation into the bacteriology of infantile summer diarrhœa Morgan several times isolated bacilli which in their cultural characters differed from the Salmonella group only in one or two particulars. Some fermented cane sugar or salicin, others failed to ferment dulcite, and others formed indol. Similar organisms have been obtained by Savage and by Bainbridge and O'Brien, who further showed that these bacilli were not agglutinated by the sera of animals inoculated with B. paratyphosus (B), B. suipestifer, or B. enteritidis (Gaertner). In a subsequent paper Savage found that bacilli of this type, which he described as "pseudo-Gaertner" organisms, occur with considerable frequency in food of various kinds, especially sausages. These observations indicate the care which must be exercised in identifying any given organism as B. paratyphosus (B).

It is also noteworthy that the frequent occurrence of "paratyphoid" bacilli either in man or in food is apparently limited to one or two districts, more especially to the south-west of Germany; in other parts of Germany they are rarely found. Apart from these criticisms the observations of other writers go to prove that in Germany B. paratyphosus (B) is not widely distributed either in man or in food. This was the conclusion reached by Aumann as the result of a large number of observations on the occurrence of the Salmonella group in food and in the blood and excreta of man and of animals. His results are completely in accordance with those of Müller and others who examined the organs of healthy domestic animals shortly after they were slaughtered. The occurrence of organisms of the Salmonella group was infrequent and was almost invariably associated with outbreaks of disease in man.

The balance of evidence, therefore, is against the view put forward by Conradi and by Hübener. Fully identified and undoubted strains of B. paratyphosus (B) have practically never been isolated either from food or from the lower animals. Its distribution is limited to man, and its habitat is the alimentary canal (including the gall-bladder) of persons suffering from paratyphoid fever or of those who have become carriers after an attack of this disease.

CLINICAL FEATURES.

The clinical description already given of paratyphoid (A) fever is equally applicable to the disease caused by B. paratyphosus (B), as is evident from the descriptions given by Savage, Rolly, Gwyn, and others. Perforation, however, has not been observed, nor is there any record of the occurrence of forms of rash other than rose spots. Fatal hæmorrhage occasionally happens and relapses are not infrequent. Inflammation of the gall-bladder and periosteal abscesses have been met with as sequelæ. In the recent outbreak in Malta ten cases were very mild and four were clinically indistinguishable from enteric fever; one of the latter died. The duration of pyrexia varied from 4 to 30 days, the average being 17 days. Epistaxis occurred and rose spots were present in several cases; severe headache was a frequent and prominent symptom.

As a rule the illness is described as being clinically indistinguishable from enteric fever. Occasionally, however, the onset of the symptoms is more acute and the illness is

[1] Lecture I. was published in THE LANCET of March 16th, p. 705.

ushered in by a rigor or by vomiting, but after a day or two it falls into line with the more typical cases just described and runs a normal course of from two to three weeks. Two other symptoms are sometimes met with which are suggestive of the illness being paratyphoid rather than enteric fever. They are, first, the occurrence of labial herpes; and, secondly, the firmness of the spleen when felt during life as compared with its consistence in enteric fever. In epidemics of paratyphoid (B) fever in Germany these symptoms were noticed in a large proportion of the cases.

One small outbreak of acute gastro-enteritis caused by B. paratyphosus (B) has been recorded by Bainbridge and Dudfield. A similar outbreak described by Schottmüller (1904) and the recent outbreak at Wrexham (1911) were also attributed to B. paratyphosus (B), but the nature of the organism was not established by absorption tests in either of these outbreaks.

POST-MORTEM APPEARANCES.

Fatal cases are infrequent, and the post-mortem records are few in number. In a case described by Babington the Peyer's patches showed no sign of inflammation or ulceration. The large intestine was intensely inflamed throughout its whole length. The mucosa was studded thickly with minute ulcers, varying in size from a pin's head to a sixpence. The ulcers were largest and deepest in the cæcum. In other cases congestion of the lower part of the ileum and ulceration of Peyer's patches have been observed. In one of Savage's cases the lower 18 inches of the ileum were ulcerated; several ulcers presented sloughs, others appeared to be healing. The mesenteric glands were inflamed and the spleen was enlarged. The first four inches of the colon also contained ulcers.

MORTALITY.

In 120 cases recorded by Lenz the mortality was 3 per cent. It is probable that the mortality is low, but the number of cases hitherto met with in this country is too small to justify any very definite opinion on the question, more particularly since—accepting Boycott's calculations—the recorded cases represent only a very small fraction of those which escape recognition.

As regards the influence of previous inoculation against enteric fever on the mortality and severity of subsequent attacks of paratyphoid fever, it may be noted that in the Malta outbreak of paratyphoid (B) fever four cases had been inoculated against enteric fever; three were mild, one was severe. Three had not been inoculated; one was mild, one severe, and one fatal. Details were lacking as to the other seven cases.

DIAGNOSIS.

(1) *Isolation of the Bacillus.*

Paratyphoid (B) fever is a septicæmia, and the bacillus has on many occasions been isolated from the blood or stools during life, or from the internal organs after death.

The isolation of the organism is, indeed, the only certain means of diagnosing paratyphoid (B) fever, since the clinical symptoms are, as a rule, indistinguishable from those of enteric fever.

(2) *Serum Reactions.*

It was hoped at first that the serum reaction (Widal's test) might furnish a trustworthy and ready means of diagnosis; but unfortunately it sometimes yields quite inconclusive results. Its diagnostic value has been carefully examined by Boycott, who reached the conclusion that an accurate determination of the *ultimate* limit of the agglutinating power of the serum for organisms of known agglutinating capacity would, in the majority of cases, give reliable information as to the nature of the infection. Even under these circumstances, however, anomalous results are occasionally obtained, as Boycott pointed out; and when the agglutinating power of the patient's serum for B. typhosus or B. paratyphosus (B) is examined, as is frequently the case, only in two or three dilutions, none of which exceeds 1–100, the serum reaction ceases to have any value as a means of differentiating beween enteric and paratyphoid (B) fever. This is clear both from Boycott's observations and from those of Savage and of Bainbridge. Savage, for example, gives the serum reactions of a patient from whose stools B. paratyphosus (B) was isolated; B. typhosus was agglutinated up to a serum dilution of 1–300, B. paratyphosus (B) in a dilution of 1–500. In a routine examination of the serum for B. typhosus only, in the usual dilutions of 1–20, 1–50, and 1–100, this case would almost certainly have been regarded as one of enteric fever. Undoubtedly many cases which give a positive serum reaction for B. typhosus, when tested in a routine fashion and which are diagnosed as enteric fever, are really paratyphoid fever. In those instances in which the patient's serum agglutinates in high dilution both B. typhosus and B. paratyphosus (B) the absorption method would probably be of assistance in the making of a diagnosis.

Frequently, however, the patient's serum agglutinates B. paratyphosus (B) in very high dilution such as 1–5000 to 1–20000, whereas it fails to agglutinate B. typhosus in higher dilution than 1–100. A diagnosis of paratyphoid (B) fever may then be regarded as almost certain, even though the bacillus is not isolated. There are, however, cases of enteric fever in which the patient's serum agglutinates B. paratyphosus (B) in higher dilution than B. typhosus. Pratt, for example, records a case of enteric fever in which the serum reacted with B. paratyphosus (B) at 1–200 dilution and gave no reaction with B. typhosus at 1–10 dilution; blood cultures gave a pure culture of B. typhosus. An absolute diagnosis of paratyphoid (B) fever in a given case rests, therefore, upon two pieces of evidence—namely, the presence of the clinical symptoms characteristic of enteric fever, and the isolation of B. paratyphosus (B) from the patient. Failing the isolation of the bacillus, a probable diagnosis can often be made from the serum reaction of the patient.

EPIDEMIOLOGY.

Attention was first called to the existence of human paratyphoid (B) carriers by Lenz (1905–06). He recorded 6 cases, one of which was under observation for at least a year. Since then a considerable number of carriers have been met with. Brückner recently examined the excreta of 316 individuals who had had paratyphoid or enteric fever at least a year previously. Three of these were chronic carriers of B. paratyphosus (B), and two of them were excreting the bacilli three years after the original attack of illness. Similar cases have been recorded by Hamilton (5 cases), Mayer (10 cases), Prigge and Sachs-Müke (6 cases), and others. In all I have met with an account of 29 chronic carrier cases. An analysis of these brings out two striking facts. In the first place, 26 of the carriers were women (in one case the sex is not stated); and secondly, seven of them either were suffering from cholecystitis or had gall-stones. Forster and Kayser, indeed, isolated B. paratyphosus (B) from the gall-bladder of a woman post mortem; in this case gall-stones were present. Further, all the cases examined by Prigge and Sachs-Müke gave a positive serum reaction for B. paratyphosus (B). In these respects paratyphoid carriers show a striking resemblance to chronic typhoid carriers, which also predominate in the female sex, and are frequently associated with disease of the gall-bladder.

So far as can be judged from the literature, all these cases were chronic carriers; practically nothing is known as to the occurrence of acute carriers, although there is no reason to suppose that they do not occur. Apparently all the cases yet described have been fæcal carriers, and I can find no record of a urinary carrier of genuine B. paratyphosus (B). Most of them further resemble typhoid carriers in the constancy with which the bacilli are excreted from day to day, and the abundance in which they are found. They differ entirely, therefore, from the cases described by Conradi of the excretion of the "paratyphoid" bacilli; Conradi found that the bacilli were excreted on a single occasion only, and even then in very minute numbers.

The question of the capacity of paratyphoid (B) carriers to cause infection has, so far, received very little attention. Such evidence as we possess is of the same character as that in favour of the infectivity of typhoid carriers. As is well known, the capacity of the typhoid carrier to cause disease has been challenged by several epidemiologists, of whom Hamer is the most prominent. We may summarise, however, the few facts that are known which point to the direct causation of paratyphoid (B) fever by carriers.

1. While investigating an epidemic of enteric fever Wernicke (1907) found by bacteriological examination that 6 per cent. of the cases were paratyphoid (B) fever; the cause of the epidemic was traced to a milk-shop in which resided or worked several typhoid carriers and one paratyphoid (B) carrier. It was believed that the milk infected by these carriers was the cause of the combined outbreak.

2. Within the last year or two Sacquepée and Bellot have

published an account of an epidemic of paratyphoid (B) fever, and have given good reasons for attributing the source of the infection to a carrier. In a corps of 250 soldiers in France, 19 cases of paratyphoid (B) fever occurred in the course of eight days. The duration of the illness was from two to three weeks, and the clinical course was that of mild enteric fever; no deaths occurred. B. paratyphosus (B) was recovered from the fæces or urine of 12 cases, and all the cases gave a positive reaction for this bacillus. An inquiry into the cause of this infection made it clear that the water-supply could be excluded. It was found, however, that a man who cooked the food for these soldiers had suffered from paratyphoid fever a short time before the occurrence of the epidemic. His blood gave a positive reaction for B. paratyphosus (B), and this organism was isolated from his stools. Repeated examinations of his stools were made during some months, always with a positive result, and there can be no doubt that he was a paratyphoid carrier.

Although this scanty evidence does not justify the conclusion that carriers are the only, or even the actual, cause of paratyphoid fever, the carrier hypothesis is the most probable one yet adduced to account for its distribution. Unfortunately, opportunities for testing this hypothesis are infrequent in this country since paratyphoid fever is seldom recognised and is almost always sporadic.

No mode of infection other than by carriers has been demonstrated. Attempts to connect the illness of the patient with water-supplies or with animal diseases or with infection by animals have been unsuccessful. Nor is there any evidence that infection has been conveyed by flies, although B. paratyphosus (B) has been isolated on one occasion from the intestine of a fly (Nicoll).

The assumption that paratyphoid fever is spread by human carrier cases does not involve, of course, an absolutely direct infection. Indirect infection by means of milk has already been mentioned, and in the outbreak described by Sacquepée and Bellot some form of food infected by a carrier apparently caused the illness. Indirect infection of this kind is, of course, well known in the case of enteric fever.

SUMMARY.

It is clear from the preceding description that there is no real distinction between the disease caused by B. paratyphosus (A) and that caused by B. paratyphosus (B). The clinical symptoms and post-mortem appearances are practically identical; and in both cases the disease appears to be spread mainly, if not entirely, by human carriers. Both organisms usually give rise to an illness clinically resembling enteric fever, although very occasionally they set up acute gastro-enteritis. Further, the habitat of both organisms is the human alimentary canal. The only important points of difference between infection by B. paratyphosus (A) and by B. paratyphosus (B) consists in the varying response of the patient as regards the production of agglutinins in his serum. Up to the present most of the carriers of the paratyphoid (A) bacillus which have been recognised have been of the acute variety, whereas the carriers of B. paratyphosus (B) are chronic carriers. This apparent difference probably depends upon the special circumstances under which paratyphoid (A) fever in India has been studied.

We are fully justified, therefore, in describing as paratyphoid fever both the illness caused by B. paratyphosus (A) and also that caused by B. paratyphosus (B). It is desirable, however, at the present time to exclude from this category the cases of acute gastro-enteritis which have been caused by these two organisms on rare occasions.

It is interesting to notice the close analogy between paratyphoid and enteric fever from the clinical and epidemiological point of view. Broadly speaking, they differ only in the higher mortality and greater severity of enteric fever and in the character of the causal organisms.

The preventive treatment of the better known disease consists: first, in the isolation, as far as possible, of recognised carriers, and, secondly, in the prophylactic use of typhoid vaccine. In the case of paratyphoid fever neither of these methods appears to have been employed in Europe. In India definite carriers are isolated, but little if any use has been made of paratyphoid vaccines as a protective measure. The widespread occurrence of this disease in the British Army in India would certainly seem to justify their employment. From a bacteriological point of view there is every reason for supposing that it would be as effective for paratyphoid fever as it has proved to be for enteric fever.

MEAT POISONING.

It has long been recognised that the consumption of unsound or even of apparently sound meat may give rise to disease. In some instances the illness is caused by parasites in the meat (e.g., trichinosis); in others it is due to such organisms as the tubercle bacillus. These sources of infection will not be considered; I propose to deal only with the well-known form of acute gastro-enteritis which follows the consumption of some definite article of food, and is popularly described as meat poisoning. This term is used in these lectures in a wide sense to include outbreaks caused, not only by various forms of meat, but also by fish and by food of *animal* origin, such as cheese and milk. The illness caused by grain is excluded. Apart from the clinical symptoms the characteristic features of an outbreak of meat poisoning are two in number. They are, first, the practically simultaneous onset of symptoms among those who have eaten some given article of food; and, secondly, the limitation of the illness to those who consumed the food. The latter statement requires some qualification, since illness occasionally, though rarely, occurs among those who have not partaken of the infected meat, but have been in close contact with the other patients.

The isolation of B. enteritidis by Gaertner (1888) and of B. aertrycke by De Nobele and by Durham (1898) in outbreaks of meat poisoning directed attention to these organisms as a cause of such outbreaks. If the records are to be trusted a large majority of the cases of meat poisoning is caused by the consumption of meat infected with one or other of these bacilli; this is undoubtedly true of most of the recent outbreaks which have been adequately investigated. There is, however, a certain number of cases in which these organisms are not present and which may be due to ptomaines.

Ptomaine Poisoning.

It must be remembered that the term ptomaine poisoning is used in two senses. Sometimes it is regarded as being synonymous with meat poisoning; this, however, is a complete misuse of the term and conveys an entirely erroneous impression of the causation of meat poisoning. The term was originally applied by Vaughan and others to poisoning by definite chemical substances formed in meat which they called ptomaines. At that time the infection of meat by B. enteritidis (Gaertner) or by B. suipestifer was not recognised. They long believed that as a result either of autolytic changes in meat or of putrefaction of bacterial origin poisonous substances were formed which gave rise to the clinical symptoms of meat poisoning. The illness was often preceded by a very brief latent period (half to three hours). These substances were called ptomaines. The poisonous bodies formed during putrefaction were regarded not as specific toxins but as products of protein disintegration, and some of them (e.g., putrescin and cadaverin) were isolated in the laboratory.

I have been unable, however, to find any instance in which the presence of such substances has been demonstrated in meat which has caused disease. The statement, for example, that poisoning by cheese is caused by the presence of tyrotoxicon in cheese is based on inadequate evidence; even in the original outbreak described by Vaughan the possibility of bacterial infection of the patients was not excluded. Very little is known, moreover, either as to the nature of the toxic products of protein disintegration or as to the stage of disintegration at which they are formed, and the difficulties of investigation are increased by the fact that in come cases at least the ordinary laboratory animals are much less susceptible than man to poisoning by these products. Definite proof that a given case of meat poisoning is caused by ptomaines is therefore very difficult to obtain, and the diagnosis rests mainly on the absence of other possible causes of the illness; it is desirable always to exclude the possibility of specific bacterial infection of the food before attributing meat poisoning to ptomaines.

There is, however, a rather important group of cases caused by the consumption of tinned meat which may possibly be regarded as coming into this category. The principal symptoms of the disease thus caused are diarrhœa and vomiting; the disease is of short duration, not usually lasting more than two or three days and sometimes only a

few hours. I have recently had the opportunity of investigating several outbreaks of illness, one caused by tinned salmon, the others by corned beef. An interesting point which was noticed in all these cases was the rapid onset of symptoms after the consumption of the food, the interval being rarely more than five or six hours, and in two cases less than an hour. It was also observed that the meat taken from the freshly opened tin appeared to be more harmful than when the meat had been exposed to the air for some hours. The beef and salmon which had caused the illness were subjected to careful bacteriological examination. The food looked perfectly good and showed no signs of decomposition. A portion of the different samples was administered by the mouth to cats, mice, and guinea-pigs. The corned beef caused no ill effects, although a cat which was fed on tinned salmon had some diarrhœa. Saline extracts made from the various samples of corned beef were injected into mice and guinea-pigs, but the animals remained perfectly well. These foods were also examined for the presence both of aerobic and of anaerobic organisms, but except for a few cocci probably derived from the air they remained sterile. Finally, one sample of tinned beef was analysed chemically for the presence of poisonous metals such as lead, tin, or arsenic; the results were again negative. The negative bacteriological evidence, the very brief latent period and the short duration of the illness render it probable that these outbreaks were due, not to infection, but to a chemical poison, although the actual cause of the illness was not ascertained.

There are, however, cases of poisoning by tinned meat in which organisms are isolated from the meat. In an outbreak at Carlisle staphylococci were obtained, but their relation to the illness caused by the meat remained doubtful, since they were not pathogenic for animals. In another outbreak following the consumption of tinned mutton B. suipestifer was isolated both from the meat and from the spleen and alimentary canal of the patient who died. This case was not due to ptomaines, and it is interesting to note that in contrast with those just considered the latent period of the illness was from 24–36 hours.[2]

INFECTION.

The consumption of meat infected with B. enteritidis (Gaertner) or B. suipestifer gives rise to most cases of meat poisoning. Two other causes have been described—namely, infection of the meat with other organisms, and intoxication by the toxins of B. enteritidis (Gaertner) or B. suipestifer. It can hardly be doubted that purulent meat, or meat infected with pyogenic organisms, may give rise to illness if consumed; and pyogenic organisms of one kind or another have occasionally been found in meat which has caused illness; but cases of this kind do not appear to be either numerous or important.

INTOXICATION.

As is well known, B. enteritidis (Gaertner) and B. suipestifer produce toxins which are extremely resistant to heat, but it is not always clearly understood that they are entirely intrabacillary (endotoxins) and that no extrabacillary toxin is formed so far as we know. The amount of toxin present in meat, therefore, must vary directly with the degree of bacterial multiplication which has previously taken place.

There is no doubt that many, perhaps most, cases of infection with these organisms are accompanied by some degree of intoxication, but a simple intoxication, apart from infection, appears to be of rare occurrence, or at least seldom to have been demonstrated. One reason for its infrequency may be that, as is clearly proved (Rimpau, McWeeney), the ordinary process of cooking often fails to destroy these bacilli in the deeper portions of the meat. Further, intoxication by these toxins would be difficult to demonstrate since we have no adequate means of detecting their presence. Possibly the examination of the patient's serum a few days after the illness might be of assistance. We know, of course, that agglutinins are formed in response to the injection of killed bacilli; and in the present case the toxin practically represents the bodies of the dead bacilli. One might expect, therefore, that after an intoxication of this kind the patient's serum would agglutinate B. enteritidis (Gaertner) or B. suipestifer. This test would only be of value provided that a definite infection by living bacilli had been excluded. So far as I am aware, this method has not hitherto been employed.

Nor does there seem to be, at present, any clear means of distinguishing between intoxication and ptomaine poisoning. The only ground, indeed, for regarding a given case of meat poisoning as due either to intoxication by the toxins of B. suipestifer or B. enteritidis (Gaertner) or to ptomaines is the failure to obtain definite bacteriological evidence that the meat was infected. Even the onset of symptoms within two to three hours after the consumption of the meat does not furnish conclusive evidence that the cause of the illness was an intoxication or was due to ptomaines. In the Chesterfield outbreak, which was clearly proved to be caused by pies infected with B. suipestifer, some of the patients became ill two and a quarter hours after eating the pies.

It thus appears that, in a certain number of cases of meat poisoning, infection by organisms cannot be demonstrated. In many of these cases the latent period is extremely short, the illness is of brief duration, and the meat is not pathogenic for laboratory animals. These outbreaks are sometimes attributed to poisoning by ptomaines or by the toxins of specific organisms such as B. enteritidis (Gaertner), although conclusive proof as to their mode of causation is lacking.

MEAT POISONING CAUSED BY B. SUIPESTIFER, OR B. ENTERITIDIS (GAERTNER).

We may now consider the outbreaks of meat poisoning which are associated with the presence of B. suipestifer or of Gaertner's bacillus. In some of these cases the bacillus was isolated both from the patients and from the food which caused the outbreak; in others it was obtained either from the food or from the patients.

Prevalence.

In Germany outbreaks of this kind are of frequent occurrence, and during the years 1898–1908 at least 261 have been recorded. Although Germany is pre-eminently the home of meat poisoning, outbreaks occur from time to time in most European countries and in America. They appear to be more frequent in countries in which much uncooked meat is eaten; and there is reason to suppose that the extensive consumption of uncooked meat in Germany is in a large measure responsible for the prevalence of this disease in that country. In the British Isles the more important recent outbreaks have been those at Hatton, Murrow, Chesterfield, St. Ann's, Tollesbury, and Limerick.

It might be anticipated on general grounds that bacterial changes in meat would occur more readily in summer, and that cases of meat poisoning would be more numerous at this time of year; and such is actually the case. Hübener found that of 36 cases 16 occurred during June, July, and August, and 30 between May and October. In another series of 27 epidemics (Sacquepée) 11 occurred in June, July, and August, and 20 between June and November. B. suipestifer is found rather more often than Gaertner's bacillus in these outbreaks; in 72 outbreaks the former was found 40 times and the latter on 32 occasions.

Clinical Characters.

A study of the more extensive and fully described outbreaks reveals a remarkable uniformity in the clinical symptoms which are observed. After the consumption of the contaminated food the onset of symptoms is preceded by a latent period varying from 6 to 24 hours, occasionally as long as from 48 to 72 hours; in any given outbreak the latent period is usually of approximately the same length for all the patients. Even in the same outbreak, however, it may vary considerably according to the time during which the food is kept before being eaten. Thus in the recent outbreak at Chesterfield, which was caused by pork pies, the average latent period before the onset of symptoms among those who ate the pies, two days after they had been cooked, was 22 hours; when the pies were four days old the latent period was 20 hours; when they were six days old it was 14 hours; and on the seventh day it was 2¼ hours.

The illness often begins with a severe headache or with a rigor speedily followed by acute gastro-intestinal disturbance—nausea, diarrhœa, vomiting, abdominal pain. In the more severe cases restlessness, extreme thirst, and nervous symptoms, such as cramp, become prominent, and death may

[2] Illness following the consumption of meat taken from resoldered leaky or "blown" tins has been left out of consideration; in all the instances discussed above the tins appear to have been sound and air-tight.

be preceded by coma. Fever is usually present and the temperature may reach 102° to 103°. As a rule the temperature falls to normal in from two to five days, and the vomiting and diarrhœa cease. The total duration of the illness rarely exceeds a week, but convalescence is often delayed by general muscular weakness or by attacks of circulatory impairment. Occasionally cases occur in which the temperature is raised for two to three weeks. All degrees of severity are met with, from fulminating cases, which may die within 24 hours, down to those of slight diarrhœa or malaise insufficient to keep the patient from work; some of those who eat the meat may remain unaffected. The clinical symptoms do not differ from those caused by some irritant poisons, and in sporadic cases the relation of the symptoms to the consumption of unsound meat may be difficult to establish. In large outbreaks, however, the practically simultaneous occurrence of all the cases, and the comparative infrequency of secondarily infected patients, can usually be readily correlated with the consumption of some particular article of food.

Post-mortem Appearances.

In the few cases recorded the post-mortem appearances have been very much the same. The mucous membrane of the stomach and intestines is swollen, and often intensely congested; the Peyer's patches are not specially involved. Minute ulcers are not infrequently present, but show no tendency to occur in any particular region of the alimentary canal. Fatty change may be visible in the liver, which then shows numerous small yellowish areas. The other organs present no noticeable alteration.

Mortality.

The average mortality is from 1·5 to 2 per cent., that in outbreaks caused by Gaertner's bacillus being higher than in those caused by B. suipestifer. In an outbreak at Breslau due to B. suipestifer there were 80 cases and no deaths, whereas in the Limerick outbreak caused by B. enteritidis (Gaertner) there were 73 cases, 9 of which were fatal. Taking a large number of epidemics the average death-rate in those associated with B. suipestifer was just over 1 per cent. as compared with 3·5 per cent. in those caused by Gaertner's bacillus. A possible explanation of this difference will be discussed later.

Diagnosis.

During the course of the illness the bacilli can often be isolated in large numbers from the stools of the patients, but they generally disappear in a week or ten days after the onset of the illness. Blood cultures are not often made, but in many cases the bacilli probably enter the circulation; post mortem the bacilli can be isolated from the heart-blood, spleen, and other viscera. A positive serum reaction is usually present six to eight days after the onset of the illness, and may become very marked during the second or third week.

The same organism is not infrequently isolated both from the patients and from the food which caused the illness. Its isolation from both these sources suffices to establish the diagnosis; and the presence of agglutinins in the patient's serum furnishes additional proof of the existence and nature of the infection. Indeed, a diagnosis may be made with fair probability on the serum reactions of the patient alone, since it is extremely rare to find a positive serum reaction for B. suipestifer or B. enteritidis (Gaertner) in healthy individuals.

The inoculation of animals with emulsions of the food or the feeding of animals with the meat is undesirable as a means of isolating these organisms in cases of meat poisoning, since either of them may be normally present in healthy laboratory animals, such as rats, mice, and guinea-pigs.

The foregoing description holds good for infection either by B. suipestifer or by B. enteritidis (Gaertner). The two organisms, however, have a different distribution, and it will be convenient to consider separately their relation to meat poisoning.

AN OPHTHALMOLOGIST'S GIFT TO HIS OLD CLINIC.—Dr. Joseph Schneider, who was formerly assistant in the Würzburg Ophthalmic Clinic, but has long been resident in Milwaukie, U.S.A., has sent 100,000 marks (£5000) to his old clinic for the free treatment of poor people.

ABSTRACT OF

Six Hunterian Lectures

ON

CERTAIN PHASES IN THE EVOLUTION OF MAN.

Delivered before the Royal College of Surgeons

BY ARTHUR KEITH, LL.D., M.D. ABERD., F.R.C.S. ENG.,

CONSERVATOR OF THE COLLEGE MUSEUM.

THE DISCOVERY OF THE IPSWICH SKELETON.

THROUGH the courtesy of Mr. J. Reid Moir, of Ipswich, Professor Keith stated that he had had the opportunity of examining, at the College, the remains of a human skeleton which had recently been discovered beneath a stratum of undisturbed chalky boulder clay in a sand-pit at Ipswich. He regarded the skeleton as of very great antiquity. Compared with other ancient human remains which have been found in England, he believed that the only one which stands in point of age is the Galley Hill man whose remains were found in a 100-foot terrace of the Thames Valley. The 100-foot terrace rests on the boulder clay, therefore the boulder clay formation is older than the 100-foot terrace, and consequently the Ipswich skeleton belongs to a much earlier date than the Galley Hill man. The flint implements which have been found in the boulder clay and in the mid-glacial sands which lie beneath the boulder clay, and in which the Ipswich skeleton was partly imbedded, are of a more primitive type. The lecturer was of opinion that there could be no question of burial, for the various horizontal lines and markings were continued across in the strata above the bones, showing that they were in the condition in which they had been originally laid down. As the bones were too fragile to be removed the overlying strata were cut away and the layer containing the bones was dug out in blocks and forwarded to the College museum. The skeleton is that of a man whose height is estimated at 5 ft. 10 in. With the exception of the Cromagnon races all palæolithic men yet known are of a low stature. Though the discovery at Galley Hill showed that the modern type of man was very ancient, Professor Keith said that he was not prepared to find beneath the chalky boulder a man of the modern type. Yet in teeth, in skull-form, and in the leading features of the skeleton, the Ipswich man does not differ in build of body from the men of to-day. He expressed the opinion that perhaps too much attention had been directed to the skull. It is very probable that the tibia, being so closely associated with the human manner of walking, will serve to distinguish various stages in man's evolution. The tibia of Neanderthal man recalls the same bone in the gorilla, but it is differentiated from the simian form by possessing a definitely marked anterior border or shin. In other palæolithic races and in all other human races the shin of the tibia is prominent and sharp. The shin of the Ipswich tibia is quite peculiar and unlike any form yet seen. In place of a sharp shin there is a flat surface. It does not represent a pathological condition, but is evidently due to a peculiarity in the gait of the individual.

NEANDERTHAL MAN AND MODERN RACES.

Some modern anthropologists were of opinion that Neanderthal man had gradually shed his simian features and become transformed into the modern type. On the other hand, others believed that such a transformation was impossible, and that Neanderthal man became extinct, leaving no progeny. The lecturer confessed that though at one time he had supposed that the transformation of the Neanderthal to the modern type was possible, the evidence which accumulated in recent years had compelled him to abandon this view. The many discoveries of this peculiar race, which had been made abundantly in France during recent years, belonged to a comparatively late phase of the Pleistocene period. Long before that period, not only in England, but also on the continent, men of the modern type existed. In quoting the case of the human mandible, Moulin Quinon, which Boucher de Perthes, the founder of our knowledge of

Palæolithic man, discovered near Abbeville, in the valley of the Somme, in 1863, the lecturer believed that the chief objection to it is that it so nearly approaches the modern type. Yet Boucher de Perthes took it with his own hand from a deep and old stratum which belongs to an age which preceded the Neanderthal period in France. The mandible is of the type we should expect in the race to which the recently discovered Ipswich skeleton belongs. Several of the Pleistocene crania found in France were pre-Neanderthal in date and yet were of the modern type. The most remarkable and best authenticated of all discoveries of man is that made at Castenedolo, near Brescia, Lombardy, by Professor Ragazzoni between 1860 and 1880. In strata belonging to an early Pliocene age and in conditions which showed that these strata had never been disturbed, he found parts of four human bodies, one the almost complete skeleton of a woman. Professor Sergi, who described these remains, found them to be of the modern type.

MAN AND MODERN ANTHROPOIDS.

In discussing ancient man and modern anthropoids Professor Keith was of opinion that, though the latter did not stand in the line of human descent, there could be no question that their ancestral stock did, for the resemblances between man and the African anthropoids were so many and so close that they could be explained only by a common origin. The African anthropoids were related to man only by a distant and very ancient cousinship, yet they undoubtedly represented the common ancestral stock much more closely than man did, and it was therefore possible to obtain by a close study of modern anthropoids some clue to the manner in which evolution worked in the primitive forms of man. Pleistocene man in Europe presented a condition exactly parallel to what was seen to-day among African anthropoids. The great, strong, brutal gorilla exemplified Neanderthal man; the more finely moulded, less brutal, nimble-witted chimpanzee, divided into a number of races, represented the modern forms of man. It was not to be supposed that there was any direct relationship between the human European and African anthropoid counterparts; in the one case both were men, in the other both were anthropoids. In the evolution of man and anthropoids similar physiological or evolutionary processes have been at work. In Neanderthal man the teeth are massive, the muscles of mastication large, the various bony processes of the skull—from which these muscles took their origin—greatly developed, while the skull was widely and strongly hafted to the neck. The gorilla showed similar characters. The various chimpanzees, like modern races of mankind, exhibited a strong tendency towards a reduction in size and development of teeth, with a corresponding lessened growth of the muscles and apparatus for mastication. At birth the skulls of gorillas and chimpanzees were very much alike. The chimpanzee as it grew up stood still at a certain point of brutalisation, while the gorilla pressed on to the ultimate limit. It would, no doubt, be found that at birth the skulls of modern man and Neanderthal man were very similar. Of the various existing anthropoids there could be no doubt that the gorilla showed the greatest assemblage of human characters.

THE GIBBON AND MAN'S EVOLUTION.

The gibbon was the most important of all surviving apes. Those who were familiar with the gibbon as seen in the Zoological Gardens, or who have kept them as pets, valued them for their mental and bodily characters. The student, however, was drawn to them because, structurally, they belonged to a very ancient world, and threw light on a very early stage in man's origin. The gibbon which lived in Europe in Miocene times was now confined to the jungles of further India, Borneo, Java, and Sumatra. There were two very distinct kinds—the large gibbon and the small or ordinary gibbon, spread over a vast jungle or forest country. The structural differences between the siamang and gibbon were similar in degree and in nature to those which separated the gorilla from the chimpanzee. Mankind, during the greater part of the Pleistocene epoch, was separated into two distinct types—the Neanderthal and the modern. When it was remembered that the gibbons, African anthropoids, and Pleistocene man represented three successive stages in the evolution of the highest primates, it was a remarkable fact that there should be in each stage a process at work which led to a separation into two kinds—one a massive and brutal form restricted in numbers and in distribution and divided into numerous varieties or races. The siamang, the gorilla, and Neanderthal man were the representatives of the brutal type, while the gibbon, the chimpanzees, and the modern human types were the representatives of the other. We were apt to think, said Professor Keith, of the upright posture as a human characteristic, but this was not the case. It was true that in man only were the lower extremities adapted for ground progression, but these changes, remarkable as they were, were minor ones compared with the transformation which we saw in the body of the gibbon. The gibbon was essentially an ordinary monkey adapted to the upright posture. There could be no doubt that in all the very ancient primates the axis of the body was carried horizontally; the gibbon was the earliest known form in which the axis of the body was carried upright; in its system we saw the introduction of a structural principle which served as the stepping-stone to a human posture. The period of the evolution of the gibbon dated back to soon after the separation of the fauna of Africa from that of South America, the latter continent being apparently the centre of evolution and of the earliest forms of monkeys.

EXTINCT ANTHROPOIDS.

From an examination of extinct forms of animals closely allied to mankind, the lecturer supported the opinion that the antiquity of man was very much greater than had been hitherto supposed. He attached great importance to dryopithecus, a great anthropoid which lived in the jungles of Europe during the Miocene epoch, and became extinct early in the Pliocene. It was about the size of the chimpanzee, and like that animal in several features, but it differed in certain points from all the existing great anthropoids and showed features which linked it with the small and much more primitive anthropoid—the gibbon. Dryopithecus was widely spread in Europe; the most complete remains have been found in the Middle Miocene formation of the South-West of France. Its teeth occurred in rather later formations in the upper valley of the Rhine and in the valley of the Danube. At least three forms of this great anthropoid had lived in Europe. The molar teeth of this ape had rather a close resemblance to the corresponding human teeth. It was possible that some of the molars attributed to this animal were really human teeth, or of the Miocene stock which gave rise to man. The molar teeth were the only points in which dryopithecus resembled man, and there was no reason to regard this extinct anthropoid more than another as a possible human ancestor. The teeth and jaws of the European gibbon of that long-past or Miocene period differ from those of their modern representatives to about the same degree as the corresponding parts of a modern Englishman differ from those of an aboriginal Australian. To students of human evolution the discovery of the gibbon at the beginning of the Miocene epoch is a matter of great importance, as we know thereby that the upright or vertical posture was already evolved. Professor Keith stated that an account of "the most important and surprising discovery" yet made regarding the early history of the primates was recently published (1910) by Dr. Max Schlosser. In the oldest of the Oligocene formation of the Fayum of Upper Egypt remains of three forms of monkeys were found. Two of these Dr. Schlosser regards as close allies of South American monkeys; the other he regards as an ancestor of the Miocene gibbon of Europe. The discovery had a double importance: it showed in the first place, that the Old World monkeys and anthropoids had, as many formerly believed, a common origin with those of South America; in the second place it showed that the basal anthropoid stock was in process of evolution at the beginning of the Oligocene period.

PRESENT POSITION OF THE THEORY OF HUMAN EVOLUTION.

In reviewing the state of knowledge concerning the evolution of man, Professor Keith was of opinion that all the evidence indicated a very great antiquity for later phases in the evolution of the human body. Mankind as seen in the world to-day—European, Mongolian, Red Indian, and Australian—were most diverse in type. Their evolution from a common stock demanded the elapse of an enormous length of time. In England we find the types of skulls of her most ancient inhabitants repeated in her modern population. With the exception of the Neanderthal type, all the ancient continental forms are still to be found in Europe. From predynastic to modern times the skull of the Egyptian has

changed only in detail. The oldest human crania found in America are of the Red Indian type. We are forced to believe, said the lecturer, that human evolution works slowly, and yet it has effected the extraordinary contrast seen between two such representatives of the modern type as the negro of Africa and the fair-haired native of North Europe. To accomplish such a degree of divergence one must carry the history of modern man at least well within the Pliocene period. Of the survivals of ancient human forms it is very likely the aboriginal Australian is the best living representative of Pliocene man. From such a type one can understand the origin of the negro on the one hand and of the European on the other. As regards the degree of relationships between man and the great anthropoids, the opinion of scientific men had changed very little since Darwin's time. Huxley regarded the structural difference between man and the gorilla as about equal in degree to that which separated the gorilla from ordinary monkeys. The divergence between the gorilla and monkey is undoubtedly the greater. It can be safely said that the brain of the gorilla represents an intermediate stage between the brains of man and of the small anthropoid, the gibbon; the brain of the dog-like monkey represents a still lower or more primitive stage. In 1904 Professor Nuttall confirmed the inferences which anatomists had drawn concerning the relationship of man to anthropoids and monkeys. He established the fact that the blood of the great anthropoids responds to vital tests to a degree almost equal to human blood; the reaction became less when the test was applied to the blood of monkeys. The response in the case of those of the Old World was greater than those of the New, thus bearing out the anatomists' opinion that the Old World monkeys are more recently related to the human stock than those of South America. There was also the evidence of disease. The great anthropoids were susceptible to syphilis—a human disease; the monkeys could be inoculated with difficulty. Anthropoids in captivity were liable to typhoid fever, and they frequently died from that very human disease—appendicitis. There was no evidence that appendicitis occurred when the anthropoids lived in their native habitats, and on their natural diet.

FEEBLE-MINDEDNESS AND THE MEASUREMENT OF THE INTELLIGENCE BY THE METHOD OF BINET AND SIMON.

By W. C. SULLIVAN, M.D. R.U.I.,
MEDICAL OFFICER IN H.M. PRISON SERVICE.

NOW that the problem of the feeble-minded is passing from the stage of general and somewhat vague discussion to become a matter for practical and detailed consideration, it will probably be necessary to devote rather more attention than has hitherto been customary to the question, Who are the feeble-minded, and how are they to be recognised? It is a little remarkable that, despite the enormous output of literature dealing with this subject within the last few years, a point of such obvious importance should on the whole have received such very inadequate treatment. It is not, of course, neglected in the numerous text-books, but it cannot be said that the pages which they devote to its consideration take us very far; in most instances, indeed, the writer seems to realise that his success in meeting this difficulty is rather indifferent, for when, after some destructive criticism of the technically phrased definitions of his predecessors, he has propounded an equally defective one himself, he prudently winds up by counselling us to be content with the general indications on this point that are laid down in the Report of the Royal Commission on the Care and Control of the Feeble-minded. That report, it will be remembered, defined the feeble-minded, in terms suggested by the Royal College of Physicians of London, as "persons who may be capable of earning a living under favourable circumstances, but are incapable from mental defect existing from birth or from an early age (*a*) of competing on equal terms with their normal fellows, or (*b*) of managing themselves and their affairs with ordinary prudence."

This definition was admirably suited for the purpose for which it was designed—namely, to indicate the scope of the inquiry referred to the Royal Commission; but it is obvious that it does not provide, and is not intended to provide, what is required for the practical work of diagnosis. It does not furnish the medical examiner with any definite criterion by which he may judge whether the given individual with whom he has to deal is or is not feeble-minded; it does not suggest how an opinion can be formed in advance as to whether the individual will be "unable to compete with his normal fellows" or "to manage his affairs with ordinary prudence," or, if he has already shown his incapacity in these directions, it does not indicate the grounds on which it is to be concluded that the proved failure is due to mental defect. On the other hand, the definition has the very great merit of being founded on strictly empirical data; and until we know a great deal more than we have yet learned about the normal as well as the feeble mind, it is very certain that definitions of this modest character are all that we can usefully attempt. What appears to be needed, therefore, is a development of the empirical test of the Commission in a fuller and more precise form, so as to define feeble-mindedness by reference to an accepted standard of intelligence, and further to furnish a convenient method for applying this standard in practice. I propose in this paper to point out that such a standard and method may be found in the ingenious *échelle métrique de l'intelligence* devised some years ago by M. Binet and M. Simon for estimating the degree of intellectual development in school children. Possibly the scale may need some modifications to fit it for measuring the intelligence of the mentally defective of adult years, and at the time of his lamented death a few months ago the late M. Binet was, in fact, revising it from this point of view; but, as shall I have occasion to remark later on, it is probable that the necessary alterations will be even slighter than M. Binet supposed. The question, meanwhile, it is satisfactory to note, is engaging the attention of M. Binet's able and devoted fellow-worker, Dr. Th. Simon.

In principle the method of M. Binet and M. Simon is very simple. By extensive observations on French school children at different ages, they were able to arrange a great number of mental tests in a series of groups graduated according to their increasing difficulty after such a fashion that each group corresponds to what the average child of a given age can do. The tests in each group are of several kinds, and, though theoretical considerations are deliberately eschewed by the authors, it is evident that the choice of the tests has had in view the different aspects of intellectual activity. This can be seen from a glance at the list of tests:—

3 years.—(i.) Point out nose, eye, mouth; (ii.) repeat a number with two figures; (iii.) enumerate the objects in an engraving; (iv.) tell surname; (v.) repeat a sentence with six syllables.

4 years.—(i.) Tell whether a little boy or a little girl; (ii.) name key, knife, penny; (iii.) repeat three numerals; (iv.) point out the longer of two lines.

5 years.—(i.) Find which is the heavier of two boxes; (ii.) copy a square; (iii.) repeat a phrase with ten syllables; (iv.) count four pennies; (v.) reconstruct a card cut diagonally into two pieces.

6 years.—(i.) distinguish morning and evening; (ii.) define common objects—fork, chair, table, horse, mother—by use; (iii.) copy a rhomb; (iv.) count 13 pennies; (v.) compare a number of drawings of faces from an æsthetic point of view.

7 years.—(i.) Point out right hand and left ear; (ii.) describe an engraving; (iii.) do three simple errands; (iv.) count three pennies and three halfpennies; (v.) name four colours—red, blue, green, yellow.

8 years.—(i.) Make mental comparison between fly and butterfly, wood and glass, paper and cardboard; (ii.) count from 20 to 0; (iii.) point out features missing in incomplete figures; (iv.) give the date; (v.) repeat five numerals.

9 years.—(i.) Take 2*d.* out of a shilling and give the change; (ii.) define common objects (see above) otherwise than by use; (iii.) recognise all the current coins; (iv.) name the months; (v.) answer simple questions involving problems of ordinary life—e.g., "When you have missed the train, what should you do?"

10 years.—(i.) Arrange five boxes (3, 6, 9, 12, 15, and 18 grammes) according to weight; (ii.) copy two simple geometrical designs—a prism and a Greek moulding—from memory after having seen them for 10 seconds; (iii.) criticise a number of absurd statements—e.g., "The body of an unfortunate young girl, cut into 18 pieces, was found yesterday in Hyde Park; it is thought that she killed herself"; (iv.) answer questions of similar nature but more difficult than in test for 9 years; (v.) bring three given words into two phrases.

12 years.—(i.) Resist a visual suggestion made by a series of pairs of unequal lines followed by a series of pairs of equal lines, the subject being asked which line is the longer and passing the test if he recognises the equality in the later pairs; (ii.) bring three given words into one sentence; (iii.) say more than 60 words in three minutes; (iv.) define abstract words—charity, justice, and kindness; (v.) rearrange a simple sentence, the words of which have been put out of their order.

15 years.—(i.) Repeat seven numerals; (ii.) find three rhymes for a given word; (iii.) repeat a sentence of 26 syllables; (iv.) interpret an engraving; (v.) explain an unfinished account of a common episode.

Most of the tests in each group include several examples; the abstract terms for definition, for instance, are three in number; the simple questions are three and the more difficult questions five, and so on. In such cases the test is considered to be passed if a majority of the instances are successfully dealt with. A great deal, of course, depends on the way of putting the questions and judging the results, and to secure uniformity in these points the authors give minute directions in the published description of their method.[1] The tests are for the most part of such a character that, if these directions are closely adhered to, the influence of the examiner's personal equation is comparatively slight; in fact, in the case of pupils who have learned the method directly in M. Binet's laboratory this influence is practically inappreciable.

The arrangement of the series of tests was arrived at, as mentioned above, from the average results of a large mass of observations; and it is not, therefore, to be expected that individual instances will show exact conformity with it. Intelligence involves many factors, and cannot be measured as we measure a simple character like stature; the multiplicity of the tests is a recognition of this fact, which, however unfortunate, is inherent in the nature of the case and constitutes a difficulty which we can only deal with by means of a convention. And the convention adopted in the Binet-Simon method is a very simple and reasonable one. The problem is, how are we to proceed in the numerous cases where the person under examination passes some of the tests of a given age and fails in others? In such a case the system adopted is to try easier tests till we have found the level at which the subject can do all the tests of a group; he is then adjudged to have reached the intellectual development of that age, and for the tests which he can pass in the higher age-groups he is credited with a further degree of intelligence which is estimated by counting five such tests as equivalent to a year to be added to the mental stature. If, for instance, a boy of, say, 7 years old does all the tests of his age plus three tests of 8 years and two tests of 9 years, he is considered to have attained to the intellectual development of $7 + (3/5 + 2/5 = 5/5)$ years—viz., 8 years; that is to say, he is a year in advance of his age. This, of course, is very artificial, but it is only by some such convention that the difficulty can be got over; the important thing is that the convention should be universally accepted.

In applying the method to school children the way of working is simply to try first the tests corresponding to the child's age; if he passes these the examiner tries him with the tests in the higher groups until he has obviously got beyond the subject's capacity; if, on the other hand, he fails in some or all of the tests of his age, the lower tests are tried until the level is reached where he can do all the tests. The result of each test, indicated by a + or a −, is entered in the proper place in a sheet prepared with columns showing the series of tests. It is further required that a more detailed record of the examination be taken down giving the exact answers to such tests as the definitions, questions, criticisms, and so forth, this record serving as evidence to justify the examiner's estimate of the result with each of these tests.

This method has now been employed for some years with very excellent results in a number of the primary schools in Paris as a means for detecting and classifying cases of mental deficiency. It works very well for this purpose because the tests are nearly all of such a kind that they do not presuppose school knowledge; they show the capacity of the child independently of the formal instruction which he may have received, and thus obviate the risk of taking mere ignorance or backwardness for mental defect. This is peculiarly important in the selection of children for treatment in the special schools. As the value of such institutions is engaging attention in this country, it may be of interest to note in passing that the experience of those who have worked with the Binet Simon method rather inclines to the view that the good results claimed for the special teaching have, at least in a good many instances, been gained with children who were not in fact mentally deficient at all.

Of course, intellectual development does not proceed in a uniform way or at constant rate, and it is necessary to take account of the range of individual variation in judging the results obtained with this method. So far as an opinion can be formed from the available evidence on this point, it would appear that a child may be two years below the intellectual level of his age without being necessarily defective; an inferiority of more than two years does not seem to be made good in subsequent development.

I now pass to consider the application of this method to the measurement of intelligence in the mentally defective who are over school age. In the view of M. Binet and M. Simon an intellectual development corresponding to the average at 12 years of age is sufficient for the ordinary needs of an individual fending for himself under present-day industrial conditions. A mental capacity falling short of that level is defective, and it is proposed further to divide the mentally deficient on the basis of this method into idiots, with an intellectual level under that of 2 years, imbeciles with an intelligence corresponding to what would be normal between 2 years and 7 years, and feeble-minded (*débiles*) with a development above that of 7 years but less than that of 12 years. Accepting this definition of feeble-mindedness, we have, then, to see the results obtained from applying to the cases of this sort the tests corresponding to the different levels from 7 to 15 years. The tests are, of course, applied in exactly the same way as with the children, the starting-point being chosen according to the impression the examiner may have formed of the subject's intelligence. It is generally desirable, however, to go through a rather wider range of tests than with children, so as to ensure a full appreciation of the individual's powers. To show the working of the accompanying table will be more useful than description; it gives the results found in the case of a dozen female prisoners of what is known as adult age—i.e., between 16 and 25. The cases were taken from a large series of observations which were prepared for publication in the *Année Psychologique*. The prisoners were selected as representatives of the run of London working-class girls; they were wage-earners, and were either unconvicted prisoners with criminal antecedents or had been committed on occasional, trivial, and quasi-criminal offences. They were criminals who had shown indications of weak mind.

On looking at the table it will be observed, in the first place, that the results very generally bear out the seriation of the tests; the only apparent exceptions are the test of copying geometrical figures from memory (10 years), which is missed by several girls who succeed in the higher tests, and the test of interpreting engravings, which, on the contrary, is often done by subjects otherwise of rather low intelligence. With regard to the former of these tests I think it possible that further experience may show that it is really too difficult, but that is a matter that time must settle. With the engravings it seems to be rather different; they enter, it will be noted, into three groups of tests. At 3 years of age the ordinary child is able to name the different objects in the engraving; at 7 years he will combine the objects in a description; but it is not till he is over 12 years that he will go further and interpret the picture as a story. For instance, one of the three engravings used by M. Binet and M. Simon represents a father and son moving their very poor belongings on a hand-cart. When shown this picture the young child puts his finger on the several figures—"a man," "a boy," "a cart"; the older child says, "a man and a boy pulling a cart with furniture"; the child of 14 or 15 will bring in the dramatic note and will speak of the poverty and sufferings of the homeless family. There is some reason to think that this interpretative tendency may develop with age and experience apart from intellectual growth; I am inclined to surmise that it may be a result of an affective influence connected with puberty; that, however, is a matter for further investigation. Anyhow, apart from these two exceptions, the order of the tests conforms to expectation. And the results in the several cases also go to prove the adequacy of the method in its present form. Taking first the girls of presumably normal intelligence, it is seen that they have all succeeded in passing the level of 12 years, most of them doing, indeed, the majority of the tests for 15 years. This probably gives a pretty accurate view of the average mentality of girls of the urban working class. Turning now to the girls suspected of being feeble-minded, we find that

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four out of the six fail to reach the level of 10 years on the Binet-Simon scale, three of them being only just over the limit of 9 years, one barely reaches 10 years, while one, and one only, shows a degree of intellectual capacity equal to that in the normal group. With this exceptional case, which is peculiarly interesting, I will deal later when speaking of the relation of these tests to the factors of mind other than the intelligence. In the other cases the value of the method in giving a clear and definite view of the extent of the deficiency was patent; three at least of the girls, though their careers suggested some degree of mental defect, showed a liveliness of manner and an appearance of alertness which could, and in fact did lead casual observers to consider them as fairly bright and to attribute their conduct to the feeble-minded criminal, it is these latter factors of mind that are of most importance. Therefore the method is to that extent an instrument of limited value in the examination of the mentally defective. On the other hand, even in such cases, it is of no small assistance to be able to separate, as it were, this one factor of the intelligence, to measure it and to assign to its deficiency the due share in the individual's inferiority. And, moreover as the factors of mind are after all intimately connected, many of the tests specially directed to the intelligence necessarily give us also some indirect indications touching emotivity and impulse. We have a striking instance of this in the exceptional observation shown in the table and referred to above—the case of the feeble-minded criminal R. P. This girl, it will be

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Initials and age		V. H., 18	K. D., 18	M. H., 22	E. T., 20	E. W., 18	K. O'D., 19	S. H., 20	M. P., 20	R. P., 18	D. M., 22	A. W., 18	L. R., 21
7 years.	Left hand, right ear								+		+		
	Describe engravings								+		+		
	Do three errands								+		+		
	Count three pennies and three halfpennies								+		+		
	Name four colours								+		+		
	Mental comparison of objects							+	+		+	+	
	unt from 20 to 0							+	−		+?	+	
	eate missing features							+	−		−	+	
	the date							+	+		−	+	
	five figures							+	+		+	+	
	l. from a shilling		+				+	+	+		+	+	+
	objects otherwise than by use		+				+	−	−		+	−	+
	y current coins		+				+	+	+		+	+	+
	the months		+				+	+	+		−	+	+
	ers easy questions		+				+	+	+		+	+	+
	ange weights in order	+	+		+	+	+	−	−	+	+	+	−
	opy figures from memory	+	−		+	+	−	−	−	+	−	−	+
	Criticise absurdities	+	+		+	+	+	+	−	+	+	−	−
	Answer difficult questions	+	+		+	+	+	+	+	+	+	−	−
	Put three words into two phrases	+	+		+	+	+	+	+	+	−	−	−
12 years.	Resist suggestion by lines	+	+	+	+	+	+	−	−	−	+	−	+(?)
	Put three words into a phrase	+	+	+	+	+	+	+(?)	+	+	−	−	−
	Say more than 60 words in three minutes	+	+	+	+	+	+	−	−	+	−	−	−
	Define abstract words	+(?)	+	+	+	+	+	−	−	+	−	−	−
	Rearrange phrases in disorder	+	+	+	+	+	+	−	−	+	−	−	+
15 years.	Repeat seven figures	+	+	+	−	−	+	−	−	−	−	−	+
	Give three rhymes	+	+	−	+	+	+	−	+	+	−	−	−
	Repeat phrase of 26 syllables	+	−	+	+	+	+	−	−	+	−	−	−
	Interpret engravings	+	+	+	+	+	+	+	−	+	−	+	+
	Explain common episode	−	+	+	+	+	−	−	−	+	−	−	−
Level on Binet-Simon scale		Nearly 15 years.	Nearly 15 years.	Nearly 15 years.	Nearly 15 years.	Nearly 15 years.	Nearly 15 years.	9½ years.	9½ years.	Well over 12 years.	9½ years.	9½ years.	10 years.
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rather to flightiness and instability than to intellectual weakness. Under such conditions an objective measure of this sort is of material assistance in clearing up the difficulty. It will certainly not be necessary to dwell on its advantages for those who are called on to satisfy lawyers and magistrates in cases where the question of mental deficiency is at issue.

The foregoing account of the method and the examples of its application will, I trust, give the reader a fairly clear notion of its merits and limitations. But before concluding, I think it may be well in this connexion to refer specially to one of these limitations which is implied in the very description of the method as furnishing a measure of the intelligence. It is designed *only* as a measure of the intelligence; it does not purport to enlighten us as to the affectivity or the will. But, of course, in regard of feeble-mindedness, at all events as the question concerns the community, as notably with reference

noted, in contrast with the other weak-minded subjects, was found to have an intelligence of fairly high level. She did, in fact, and did extremely well, all the tests for 15 years, except the repetition of seven figures, and she only just failed in that. And she was also successful in all the tests for 12 years, except that for showing the power of resistance to suggestion. In this test the subject is shown two straight lines side by side on a sheet of paper, that on the left being a little shorter than that on the right, and he is asked to point out the longer; he is next shown a second and third pair in which the length of both lines is increased, but the inequality between them is preserved, and he is asked the same question; then, when the suggestion that the right is always the longer has thus been given, he is shown three other pairs in which the lines are of the same length, and

Most of the tests in each group include several examples; the abstract terms for definition, for instance, are three in number; the simple questions are three and the more difficult questions five, and so on. In such cases the test is considered to be passed if a majority of the instances are successfully dealt with. A great deal, of course, depends on the way of putting the questions and judging the results, and to secure uniformity in these points the authors give minute directions in the published description of their method.[1] The tests are for the most part of such a character that, if these directions are closely adhered to, the influence of the examiner's personal equation is comparatively slight; in fact, in the case of pupils who have learned the method directly in M. Binet's laboratory this influence is practically inappreciable.

The arrangement of the series of tests was arrived at, as mentioned above, from the average results of a large mass of observations; and it is not, therefore, to be expected that individual instances will show exact conformity with it. Intelligence involves many factors, and cannot be measured as we measure a simple character like stature; the multiplicity of the tests is a recognition of this fact, which, however unfortunate, is inherent in the nature of the case and constitutes a difficulty which we can only deal with by means of a convention. And the convention adopted in the Binet-Simon method is a very simple and reasonable one. The problem is, how are we to proceed in the numerous cases where the person under examination passes some of the tests of a given age and fails in others? In such a case the system adopted is to try easier tests till we have found the level at which the subject can do all the tests of a group; he is then adjudged to have reached the intellectual development of that age, and for the tests which he can pass in the higher age-groups he is credited with a further degree of intelligence which is estimated by counting five such tests as equivalent to a year to be added to the mental stature. If, for instance, a boy of, say, 7 years old does all the tests of his age plus three tests of 8 years and two tests of 9 years, he is considered to have attained to the intellectual development of $7 + (3/5 + 2/5 = 5/5)$ years—viz., 8 years; that is to say, he is a year in advance of his age. This, of course, is very artificial, but it is only by some such convention that the difficulty can be got over; the important thing is that the convention should be universally accepted.

In applying the method to school children the way of working is simply to try first the tests corresponding to the child's age; if he passes these the examiner tries him with the tests in the higher groups until he has obviously got beyond the subject's capacity; if, on the other hand, he fails in some or all of the tests of his age, the lower tests are tried until the level is reached where he can do all the tests. The result of each test, indicated by a + or a −, is entered in the proper place in a sheet prepared with columns showing the series of tests. It is further required that a more detailed record of the examination be taken down giving the exact answers to such tests as the definitions, questions, criticisms, and so forth, this record serving as evidence to justify the examiner's estimate of the result with each of these tests.

This method has now been employed for some years with very excellent results in a number of the primary schools in Paris as a means for detecting and classifying cases of mental deficiency. It works very well for this purpose because the tests are nearly all of such a kind that they do not presuppose school knowledge; they show the capacity of the child independently of the formal instruction which he may have received, and thus obviate the risk of taking mere ignorance or backwardness for mental defect. This is peculiarly important in the selection of children for treatment in the special schools. As the value of such institutions is engaging attention in this country, it may be of interest to note in passing that the experience of those who have worked with the Binet Simon method rather inclines to the view that the good results claimed for the special teaching have, at least in a good many instances, been gained with children who were not in fact mentally deficient at all.

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On looking at the table it will be observed, in the first place, that the results very generally bear out the seriation of the tests; the only apparent exceptions are the test of copying geometrical figures from memory (10 years), which is missed by several girls who succeed in the higher tests, and the test of interpreting engravings, which, on the contrary, is often done by subjects otherwise of rather low intelligence. With regard to the former of these tests I think it possible that further experience may show that it is really too difficult, but that is a matter that time must settle. With the engravings it seems to be rather different; they enter, it will be noted, into three groups of tests. At 3 years of age the ordinary child is able to name the different objects in the engraving; at 7 years he will combine the objects in a description; but it is not till he is over 12 years that he will go further and interpret the picture as a story. For instance, one of the three engravings used by M. Binet and M. Simon represents a father and son moving their very poor belongings on a hand-cart. When shown this picture the young child puts his finger on the several figures—"a man," "a boy," "a cart"; the older child says, "a man and a boy pulling a cart with furniture"; the child of 14 or 15 will bring in the dramatic note and will speak of the poverty and sufferings of the homeless family. There is some reason to think that this interpretative tendency may develop with age and experience apart from intellectual growth; I am inclined to surmise that it may be a result of an affective influence connected with puberty; that, however, is a matter for further investigation. Anyhow, apart from these two exceptions, the order of the tests conforms to expectation. And the results in the several cases also go to prove the adequacy of the method in its present form. Taking first the girls of presumably normal intelligence, it is seen that they have all succeeded in passing the level of 12 years, most of them doing, indeed, the majority of the tests for 15 years. This probably gives a pretty accurate view of the average mentality of girls of the urban working class. Turning now to the girls suspected of being feeble-minded, we find that

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7 years.	Left hand, right ear								+		+		
	Describe engravings								+		+		
	Do three errands								+		+		
	Count three pennies and three halfpennies								+		+		
	Name four colours								+		+		
8 years.	Mental comparison of objects							+	+		+	+	
	Count from 20 to 0							+	−		+?	+	
	Indicate missing features							+	−		−	+	
	Give the date							+	+		−	+	
	Count five figures							+	+		+	+	
9 years.	Take 2*d.* from a shilling		+				+	+	+		+	+	+
	Define objects otherwise than by use		+				+	−	−		+	−	+
	Identify current coins		+				+	+	+		+	+	+
	Name the months		+				+	+	+		−	+	+
	Answers easy questions		+				+	+	+		+	+	+
10 years.	Arrange weights in order	+	+		+	+	+	−	−	+	+	+	−
	Copy figures from memory	+	−		+	+	−	−	−	+	−	−	+
	Criticise absurdities	+	+		+	+	+	+	−	+	+	−	−
	Answer difficult questions	+	+		+	+	+	+	+	+	+	−	−
	Put three words into two phrases	+	+		+	+	+	+	+	+	−	−	−
12 years.	Resist suggestion by lines	+	+	+	+	+	+	−	−	−	+	−	+(?)
	Put three words into a phrase	+	+	+	+	+	+	+(?)	+	+	−	−	−
	Say more than 60 words in three minutes	+	+	+	+	+	+	−	−	+	−	−	−
	Define abstract words	+(?)	+	+	+	+	+	−	−	+	−	−	−
	Rearrange phrases in disorder	+	+	+	+	+	+	−	−	+	−	−	+
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	Give three rhymes	+	+	−	+	+	+	−	+	+	−	−	−
	Repeat phrase of 26 syllables	+	−	+	+	+	+	−	−	+	−	−	−
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he is considered to have passed the test if he recognises the equality. In this test R. P., who did so well in the other tests, failed, and failed most egregiously, succumbing to the suggestion as completely as the least intelligent of the feeble-minded girls. The most probable explanation of this result is that suggestibility, or, at all events, the sort of suggestibility that we are dealing with by such a test, depends largely on affectivity and impulse, and that these factors rather than the intelligence are at fault in this case. And the facts as to the girl's delinquency tend to confirm this surmise. She had committed a very silly act of arson, setting fire to a chair in the house where she was employed as a servant. She admitted the crime but could not assign any motive for it, saying merely that the idea came to her and that she acted without being able to think what she was doing. This occurred within a few hours of a more serious outbreak of fire which appears to have been due to accident, but in which, at any rate, it was not shown that she had any hand. Further, she had been subjected from childhood to a peculiar form of pathological lying which would lead her constantly to confirm and supplement by imaginary details any statement or opinion emanating from a person who had gained some influence over her. It is difficult not to connect this morbid trait and the apparently imitative act of arson with the marked suggestibility revealed in the test with the lines. I have thought it worth while to refer at some length to this girl's case as an illustration of the point I wish to make regarding the indirect value of some of the Binet-Simon tests outside the field for which they are specially intended. In the interpretation of the engravings and in several of the questions and definitions the subject's affectivity is very frequently shown in an equally instructive manner.

It should, of course, hardly be necessary to point out that this method is not in any sense proposed as a substitute for that complete clinical study on which alone an opinion of any value can be formed with regard to a case of mental deficiency. What is claimed for it is that it supplements the clinical investigation, and enables its results, so far as the factor of intelligence is concerned, to be presented with a clearness and an objectivity which must considerably enhance their value. From this point of view it is likely, I think, to be found of very real service in medico-legal practice and in the certification of the feeble-minded.

In conclusion, it remains only to express my very deep appreciation of the great kindness shown me by the late M. Binet and his fellow-workers, to whom I have been indebted for the opportunity of making myself familiar with this interesting and valuable method. M. Binet, with the generous spirit of the true *savant*, not only allowed me free access to his laboratory, but gave me most freely the invaluable aid of his advice and supervision. Dr. Th. Simon, the distinguished physician of Morel's old asylum of St. Yon, whose charming hospitality I cannot sufficiently acknowledge, gave me the opportunity of seeing in his service the application of the method to a large number of congenital defectives of all grades, and also to a number of insane patients. To Mlle. Giroud, secrétaire de la Société Libre pour l'Étude Psychologique de l'Enfant, I am indebted for instruction in the details of the various tests, and I have to thank M. Vanney, the enlightened headmaster of one of the principal primary schools in the district of La Villette, for allowing me to practise the method on a large number of his pupils of different ages. I have also to acknowledge the kindness of the well-known philanthropist, M. Henri Rollet, who permitted me to test the intelligence of several adolescent criminals in one of his after-care homes. And finally I have to thank the Prison Commissioners for granting me the period of special leave during which I was enabled to undertake this study.

H.M. Prison, Holloway, N.

THE (Biennial) Health Conference and Exhibition, 1912, will be held at the Royal Horticultural Hall, Westminster, from June 24th to 27th, under the patronage of H.R.H. Princess Christian of Schleswig-Holstein, in coöperation with the National Health Society. The promoter and organiser is Miss R. V. Gill, 35, Ludgate-hill, London, E.C.

PHARYNGEAL SUPPURATION: COURSE AND DIRECTION OF VARIOUS TYPES.

BY GEORGE W. BADGEROW, F.R.C.S. EDIN.,
SURGEON TO THE THROAT HOSPITAL, GOLDEN-SQUARE, LONDON.

IN dealing with this subject it is advisable to consider first the anatomy and physiology of a region so intimately concerned with all the vital processes, and then to apply well-established principles of surgery and pathology without being led either by the specialist's tendency to magnify fine clinical distinctions or by the general surgeon's desire for differences which, although not prominent, may be of great importance in diagnosis, prognosis, and treatment. It is also advisable in giving a comprehensive description of any surgical condition that we should avoid the use of terms which, though sanctioned by ancient usage, are not scientifically accurate, and may be misleading. Such terms as "quinsy" and "croup," for instance, should be relegated to the past. There is some danger, however, of substituting for these terms others which are more impressive, but which are, after all, only more evidences of our want of knowledge of the essential nature of the disease with which we have to do. In this category comes the expression "retro-pharyngeal abscess," an expression which neither describes nor defines the several conditions to which it is commonly applied.

The methods usually employed by medical writers in classifying diseases may be either anatomical or clinical. In classifying suppuration in the region of the pharynx, while it is a great advantage to possess a wide experience of the various and varied appearances which present themselves to the surgeon engaged in their treatment, only a thorough grasp of the anatomy and physiology of the region will furnish the principles which go to form reliable knowledge, and which will enable him to apply his technical skill in a manner calculated to bring the greatest amount of relief to the sufferer.

Points for Consideration in the Anatomy and Physiology of the Pharynx.

The most important structure to study in connexion with the pharynx is the strong aponeurosis which, known as the pharyngeal aponeurosis, forms a kind of fibrous bag, around which are applied the structures required for the performance of the important functions concerned and on which they act. This aponeurosis is attached above to the under surface of the basal portion of the occipital bone, immediately in front of the pharyngeal tubercle; then to a line extending along the under surface of the petrous portion of the temporal bone as far as the anterior border of the jugular foramen; then to the inner end of the Eustachian tube and along the border of the internal pterygoid plate, to the pterygo-maxillary ligament and to the posterior end of the mylohyoid ridge on the lower jaw. From this the aponeurosis passes down the side of the tongue to the hyoid bone. Here it ends, but under the name of the thyrohyoid membrane is continued to the middle of the posterior surface of the thyroid cartilage, where it becomes merged in the lining membrane of the larynx.

Posteriorly the bag formed by the pharyngeal aponeurosis is complete, and forms a continuous layer of tissue from the base of the skull to the sixth cervical vertebra, where it joins the fibrous coat of the œsophagus at the level of the cricoid cartilage. The soft palate may be considered as part of the pharynx, and the fibrous aponeurosis, which is clothed by mucous membrane in front and behind by both muscles and mucous membrane, forms an integral part of the pharyngeal apparatus and is intimately concerned in suppurative processes, especially in the neighbourhood of the tonsils. The soft palate when drawn back acts as a curtain separating the mouth from the naso-pharynx and nose.

Superficial to the pharyngeal aponeurosis is the mucous membrane, which is continuous with that of the several cavities or canals opening into it, but which has a distinct character of its own. Numerous mucous glands are to be found scattered over its surface, while an abundance of lymphoid tissue, which is especially marked during the earlier years of life, is responsible in great measure for the ease with which pathogenic micro-organisms produce their effects within its substance.

The lymphoid tissue is mainly collected into a series of aggregations called "tonsils," which form a ring extending from the roof of the pharynx down the sides of the faucial isthmus to the dorsum of the tongue. Lying beneath the body of the sphenoid is the collection of lymphoid tissue known as the pharyngeal or Luschka's tonsil. With this the name of "adenoids" is associated when it is hypertrophied; a smaller collection is that at the posterior lip of the Eustachian orifice and in the fossa of Rosenmüller lying above and behind it. At the sides of the buccal aperture, between the anterior and posterior pillars of the fauces in the recess known as the tonsillar recess, is the faucial tonsil or tonsil proper, while on the pharyngeal aspect of the dorsum of the tongue, lying between that and the epiglottis, is the lingual tonsil, which differs from the others in its relative insignificance during the years of childhood.

Having considered the aponeurosis and its overlying mucous membrane, we next have to deal with the muscles which lie outside the aponeurosis in a space between that and the strong layer of tissue known as the prevertebral fascia. This space has been described as the "retro-pharyngeal space," a description which is too vague, especially when we come to consider suppuration in the pharynx as a whole. We must bear in mind that there is an anterior as well as posterior and lateral surfaces to the pharynx, and we shall thereby be enabled to include various important forms of suppuration beneath the root of the tongue which lie in the same plane as the space in which the constrictors of the pharynx lie. The constrictors are three—the superior, middle, and inferior, which are associated in deglutition by the stylopharyngeus, the stylohyoid, the palatoglossus, and palatopharyngeus, together with the muscles of the soft palate. These muscles are important in connexion with suppuration, not so much from the point of view of cause as of effect, for their involvement gives rise to one of the most characteristic symptoms of that affection—viz., dysphagia or difficulty in deglutition.

Posterior to the muscle lies the strong prevertebral fascia, which stretches across the neck from the deep surface of one sternomastoid to that of the other, and thus separates the anterior surface of the bodies of the cervical vertebræ and the ligaments and muscles attached thereto from the muscles of the pharynx. Posterior to the prevertebral fascia on the rectus capitis anticus major lies the post-pharyngeal gland, which may caseate and form an abscess presenting on the pharyngeal wall. Behind these several structures we come to the bodies of the first six cervical vertebræ, and thus complete the list of the anatomical factors likely to be involved in suppuration of the pharynx.

Etiology of Pharyngeal Suppuration.

The etiology of suppuration in the region of the pharynx resolves itself into a question of bacteriology, and when we consider that in apparently healthy throats there are found, among other numerous pathogenic bacteria, the tubercle bacillus, the diphtheria bacillus, streptococci, staphylococci, pneumococci, bacillus coli communis, the micrococcus catarrhalis, and various forms of leptothrix, the only wonder is that inflammations and suppuration are not more common than they are. The structure of the lymphoid tissue itself predisposes to the entrance of micro-organisms, for in the epithelium of the crypts there are gaps which permit of the passage of leucocytes, and *a fortiori*, of the much smaller schizomycetes which set up disease processes. Placed at the entrance to the respiratory and digestive systems, and intended evidently by nature to act as a protecting filter, the tonsillar tissue must be admitted to fail to a great extent in the purpose which it is supposed to fulfil.

As factors predisposing to suppurative processes in the pharynx may be mentioned such causes of chronic irritation as smoking, alcoholism, and syphilis. The exanthemata, especially measles and scarlet fever, also predispose to infection, and the influenza bacillus by its effect on the accessory air sinuses is responsible for many cases of suppuration owing to the discharge into the naso-pharynx of the products of acute and chronic sinusitis. Middle-ear disease through its connexion with the Eustachian tube is liable to produce suppurative pharyngitis.

The mechanical causes of suppuration in the pharynx are foreign bodies, such as fish bone, chicken bones, rabbit bones, while such an object as a broken pipe-stem has been extracted from a tonsil, where it lay embedded for weeks. In children, wounds from pointed sticks give rise to suppuration not infrequently; while in lunatics and persons of suicidal tendencies we may have to deal with the results of infected wounds inflicted by knives, pieces of glass or metal, and by bullets.

Classification of Suppuration in the Pharynx and its Neighbourhood.

The only scientific classification of pharyngeal suppuration is an anatomical one based on the tendency which pus usually exhibits of travelling in the planes of cellular tissue. One is not unmindful of the possibility of this, as of all other disease processes, extending from the original seat to adjacent strata, but we should always endeavour to have before our mental purview a definite conception of a starting-point from which to follow the course and progress of the disease in each individual case. Suppuration originating in each of the layers which compose the pharyngeal wall has a definite character of its own, which often will enable the careful investigator to recognise and deal with it effectually as soon as the time for action arises.

The classification which I would propose is as follows. Pharyngeal suppuration, according to its seat of origin, may be: (1) Lymphoid; (2) submucous; (3) subaponeurotic; (4) prevertebral.

1. *Suppuration arising in the lymphoid tissue of the pharynx.*—Although this is by far the commonest seat of infection, it is seldom that we find any large collections of pus in this layer of the pharyngeal substance. In acute lacunar tonsillitis the crypts may contain pus which either confines itself to the separate lacunæ or spreads as a false membrane over the tonsillar surface. Occasionally one finds as a result of parenchymatous tonsillitis the whole tonsil becoming smooth and rounded, forming a localised abscess. In my experience I have only observed a slight number of cases in which suppuration resulted in a pure tonsillar abscess. It is rarer still in the pharyngeal and lingual tonsils. In Vincent's angina one sometimes finds a membrane due to staphylococcus infection which may be mistaken for diphtheria.

2. *Suppuration originating in the submucous tissue of the pharynx.*—This is the form of suppuration which most often presents itself to the surgeon, and is best exemplified by the well-known peritonsillar abscess to which the popular designation of quinsy is applied. It is characterised by a rapid infiltration of the loose submucous tissue over an extent of surface varying with the virulence and duration of the infective process. In the case of peritonsillar abscess the local manifestations are most marked in the soft palate, but may, if unchecked, spread over the whole of the submucous layer of the pharynx. In the form of pharyngeal suppuration described by Senator under the name of "acute infectious phlegmon" the disease may run its course and cause death in four or five days, either from œdema of the larynx or from the severity of the constitutional symptoms. Here the deeper layers of the pharynx may be practically free from pus.

The most prominent symptom in all submucous affections is dysphagia. This is due partly to the presence of the swelling, but mostly to the pain caused by pressure on delicate nerve endings. Trismus is also largely reflex in order to prevent pain.

3. *Suppuration arising in the subaponeurotic layer of the pharynx.*—To suppuration occurring in the space between the pharyngeal aponeurosis and the prevertebral fascia some writers would confine the term "retro-pharyngeal abscess." This, however, appears to me to favour the looseness of thought which in the past has done so much to prevent a clear understanding of the various processes which may result in an abscess in this region.

Adhering to the classification proposed above, the term "subaponeurotic suppuration" would include not only an abscess originating in the deep cervical glands and presenting at the back of the pharynx, but also the particular form of submaxillary phlegmon known as "angina Ludovici," while it would exclude an abscess the origin of which was due to caries of the cervical vertebræ or caseation in the post-pharyngeal gland.

4. *Prevertebral suppuration.*—The last of the forms of suppuration in the pharynx is that with which the name of retro-pharyngeal abscess is almost always associated in the mind of the general practitioner. Arising not in the

pharynx but as an abscess either of the vertebræ or of the lymphatic glands adjacent thereto, it has in reality no right to be designated as pharyngeal, and the name "prevertebral" ought, I think, to be employed instead to describe this condition. A prevertebral abscess may, of course, arise as a result of a penetrating wound of the pharynx, just as an abscess of the lung may result from a stab of the chest-wall, but in the latter case we describe the disease in association with the organ in which it is found. The subject of caries of the cervical vertebræ and of caseation of the post-pharyngeal glands, therefore, while of great interest to the surgeon, need not be exhaustively treated of here, for it is a subject which has been adequately dealt with by more than one writer. One or two points in connexion with diagnosis may be referred to. The history alone will do a great deal to enable us to distinguish the other three forms of suppuration from this one. The sufferer is often a child or young adult and the accompanying signs of spinal caries are mostly fairly evident. The duration, the absence of fever, the lack of muscular rigidity except where actual deformity exists, and the slow onset of dysphagia will decide us in making a diagnosis. The pus may present either in the middle line or laterally, and the presence of fluctuation will distinguish from sarcoma, while there is no superficial bleeding when the swelling is touched, as in the latter disease. The prognosis depends upon the extent of the spinal mischief and to some extent on the care with which the treatment is carried out, for although the symptoms may not appear urgent the tendency for the pus to track downwards, and so beyond the reach of the surgeon, and the risk of secondary infection if the abscess opens into the pharynx are considerations of weighty import in dealing with a case of this kind.

Brook-street, W.

A CASE OF ACUTE MYELITIS WITH OPTIC NEURITIS (NEUROMYELITIS OPTICA).

BY ERNEST F. CLOWES, M.R.C.S. ENG., L.R.C.P. LOND.

With Remarks by Dr. FREDERICK TAYLOR, *Consulting Physician to Guy's Hospital.*

THE following case of this interesting form of disease came under my care last year, and I have thought it worthy of publication. Dr. Frederick Taylor, who published a case of the kind some years ago in the *Guy's Hospital Reports*, Vol. LIII., p. 45, has very kindly added some remarks as to the literature of the subject.

The patient was a single woman, aged 39 years. She had two brothers and two sisters. The brothers were both healthy, but very sensitive and highly strung men. One of the sisters was very neurotic and had frequent hysterical attacks, and the other was mentally deficient. The father had died from senile decay at the age of 90 years and the mother from cerebral hæmorrhage when 78 years old. By all her family the patient was always regarded as very capable and industrious, and she was endowed with a strong personality which clearly dominated the whole circle. She came home from her situation to attend her mother's funeral, and remained at home afterwards to assist her sister, who was greatly pressed with her business; and to complete an order the patient and her sister worked for two whole nights. When the work was finished the patient delivered it, and coming home was caught in a severe rainstorm and got wet through. She had a hot bath and went to bed at 7 P.M.

On the following morning (July 14th) the patient was awakened at 2.30 A.M. by a severe "stabbing" and "burning" pain in the spine "just below the shoulder-blades." The pain radiated round to the front of the chest; it was agonising. Hot flannels and other means were tried, but the pain persisted in severity, and I was called to see her at 5.30 A.M. I found her sitting up in bed absolutely rigid and grasping the sides of the bedstead with each hand, thus keeping the body and neck perfectly straight. Her eyes were fixed and looked directly forward. She was quite sensible, and when I asked her what she complained of she said that if she moved in the slightest degree she had intense pain just below the "shoulder-blades." I proceeded to examine the back, but the movement of the bed-clothes caused her to shriek out with agony. The pulse was rather full, but regular, 73 to the minute, and the respirations were 18 to the minute. I injected hydrochlorate of morphia (gr. ¼) and waited to watch its effect. In less than 15 minutes the patient said she felt drowsy, and moved her head a little to the right side, and asked for some milk; she then gradually levered herself down into the recumbent position and dropped off to sleep. I saw her again at 11.30 A.M. and found her still lying down in the bed. She had had five hours sleep, and was fairly free from the pain in the back, so that I could make a more detailed examination. She did not look ill, and had a bright complexion. She complained of not being able to see clearly with the right eye, and said the left was also very weak. Round her waist she said there was a feeling as if a broad elastic band was applied very tightly, and the skin over this area was so tender that she could not bear the weight or touch of the bed-clothes. The right leg was everted and she said it felt weak; there was marked loss of power in this limb. The left leg was not everted, and apparently had normal power, as she could flex it against considerable pressure. There was no loss of power in the arms and a good strong grasp was present in each hand. There were no sensory changes in the legs or thighs; the patient was quite sensitive to the touch of a feather or pin anywhere, and could locate accurately the slightest touch. Over an area in front limited above by a line drawn round the chest about an inch below the nipples, and below by a line drawn round the abdomen 3 inches above the umbilicus, there was marked hyperæsthesia; touching the patient with a feather anywhere over this area, back or front, caused intense pain. Over the face, head, arms, chest, and back sensation was normal. In the right limb the knee-jerk was absent. Plantar reflex was also lost, but ankle clonus was very marked. In the left limb a very faint knee-jerk was present, but no plantar reflex and ankle clonus could be obtained. If either foot was flexed the foot remained so for a short time, the muscles slowly relaxing. There was no wasting of muscle in the legs, arms, or hands. The electrical reactions could not be tested. The bladder and rectum were unaffected. Of the special senses hearing was perfect. When tested for smell with the left nostril closed the patient could not detect the smell of ordinary scent (lavender water) or even the smell of an onion. With the right nostril closed she could but faintly tell the difference between the two scents mentioned. In taste a little liquor strychninæ applied to the left half of the tongue could not be appreciated, but when it was applied to the right half she could easily distinguish the bitter taste. Sugar and salt when applied to each half of the tongue could be distinguished on the right half but not on the left. Motion and tactile sensation in the tongue were normal. The patient could distinguish heat from cold when tried in the lower part of the body or limbs. The pupils were equal and they reacted to light and accommodation, there was no oculo-motor paralysis, and apparently no limit to the visual field except in the right eye. The right disc was blurred and indistinct but the left only slightly so. The urine was acid, of specific gravity 1016. No albumin or sugar was present.

July 16th: The patient had passed a very restless night. The pain in the back was most severe. She had tried to get out of bed and had badly bruised the left shin and knee. Sensory changes had developed since the day before and she could not tell the touch of a feather from that of a pin. When the left leg was touched she said it was the right. The left leg had lost its power and it fell quite limp when raised and allowed to fall. The reflexes remained the same as on the day before. She said her eyesight was more dim. The bladder and rectum remained unaffected and the band of hyperæsthesia remained the same in extent as before. The temperature was 100·4° F. From the 17th to the 21st the patient's condition remained unchanged.

July 22nd: The patient had had a bad night, and the motor symptoms had greatly changed. There was now almost total paralysis in the lower limbs and the knee-jerks were absent. Plantar reflexes could not be obtained, but marked ankle clonus was present. There was total anæsthesia over the lower limbs, extending upwards almost to the umbilicus. Breathing was almost entirely abdominal. The bladder and rectum remained unaffected. The arms, neck, and head could be moved easily and apparently without any loss of power. Both optic discs remained very blurred,

and the patient complained of great dimness of vision. She was moved to a cottage hospital, and all her symptoms slowly increased. On the 27th she had retention of urine and the catheter had to be used. Marked dysphagia set in, and she died at 5.30 P.M. suddenly while trying to swallow some milk. No post-mortem examination was allowed.

REMARKS BY DR. FREDERICK TAYLOR.

The case above recorded is an instance of a combination of lesions which excites interest, partly on account of its relative rarity, and partly from the difficulty in explaining the occurrence of the inflammatory lesion in two parts so remote from one another. When I published a case of the kind in the *Guy's Hospital Reports* in 1896 I was able then to give a bibliography of 25 references. Other cases have been since published, and in his thesis for the Doctorate of Medicine of Paris, 1907, Dr. H. J. T. Hillion gives 49 references, and reports more or less fully 45 cases dating from 1879 onwards. My own case is not given or referred to by him.

The name "la neuro-myélite optique," or neuromyelitis optica, was first proposed by Devic in 1894, and under that name recent cases have generally been recorded. I do not regard it as a happy one, since the application of the epithet "optic" to the substantive "myelitis" makes sheer nonsense; but it is very difficult to find a suitable alternative. Some French writers speak of it as Devic's disease—*maladie de Devic*. But after all there is not much more in it than the apparently accidental co-existence of optic-neuritis and myelitis; accidental because an explanation of the association of optic neuritis with myelitis is not so easy to find or suggest as that of an association of optic neuritis with a cerebral lesion. Hillion says under "Definition," "The name, acute neuromyelitis optica, is employed for a clinical syndrome characterised by a diffuse myelitis, most often acute, preceded, accompanied, or followed by an optic neuritis of parallel evolution."

Thirteen years previously to the publication of Hillion's treatise Gault had published his Doctor's thesis, at the University of Lyons, on the same subject, based on a fully reported case under Devic's care. The conclusions do not materially differ from those of Hillion, and very little seems to have been added in the interval between the appearance of the two theses.

As a result, the following propositions may safely be made.

Double optic neuritis is occasionally seen in association with acute myelitis. The optic neuritis generally precedes the myelitis by some days or weeks; but it may occur simultaneously, or first appear some days after the onset of the myelitis. The neuritis is in some cases only shown by a temporary amaurosis; in others there is obvious papillitis. The myelitis is, as a rule, not different in its symptoms and course from myelitis unassociated with an ocular lesion. The prognosis of the case must depend on the severity of the myelitis, and the mortality has been about 50 per cent. The optic neuritis has often subsided, and vision has been recovered.

There is no satisfactory conclusion as to the nature of the lesion; most authors are inclined to regard it as infection attacking the cord and the optic nerve separately. The evidence is strongly against the spread of infection, or inflammation, from the spinal cord to the optic nerve.

Pathologically, the lesion of the cord is seen to be a diffuse or disseminated myelitis, affecting either the cervical or dorso-lumbar region, or both; and histologically, in some cases, numerous endothelial cells undergoing fatty degeneration have been found around the vessels in the affected parts. To these importance has been attached by some authors, but others are satisfied that such elements are not peculiar to those cases. In a few of the fatal cases some indications of encephalitis have also been present. In two cases by Auerbach there was clinical evidence of cranial nerves being involved; and in the present case there were noted a diminution in the sense of smell and loss of taste in the left half of the tongue. A reference to a few cases will show some of the points of difference among them.

In my own case vision declined and was lost in the course of two days, and paralysis of the legs began a fortnight later. No papillitis was ever observed, but the optic discs were atrophied three months later, and I inferred that there had been a retrobulbar neuritis. Some improvement nevertheless took place in the patient's vision for a time to the extent of her being able to see objects, but it was still much impaired 12 months later. The arms were slightly involved, and hyperæsthesia of the chest wall was present at the upper border of the fourth costal cartilage. The patient died after 14 months' illness. There was no post-mortem examination.

The case which forms the subject of this paper was much more rapid. The disease was an acute ascending paralysis, commencing with indications of meningitis in the form of acute pain and spinal rigidity. Vision was impaired on the following day, and on the day after this evidence of slight papillitis, more on the right side, was observed. The upper limit of hyperæsthesia was one inch below the nipples. On the ninth day of illness the breathing was almost entirely abdominal, but the arms could be moved apparently without any loss of power. On the fourteenth day marked dysphagia set in, and she died while attempting to swallow fluid.

Dr. T. D. Acland read a case in June last before the Association of Physicians of Great Britain and Ireland. He has not yet published it, but has kindly allowed me to mention the following main facts. The patient was a man, 38 years of age, who was admitted into St. Thomas's Hospital on Nov. 12th, 1910, complaining of total blindness in both eyes, partial loss of power in both legs and in the left arm, loss of sensation over the lower part of the body and legs, and loss of control of the sphincters. The illness had begun eight days previously. The symptoms pointed to a considerable lesion of the spinal cord, extending, with intermissions, from the cervical enlargement to the lumbar enlargement, and affecting both grey and white matter. The right fundus showed thrombosis in, and hæmorrhage from, the retinal vessels, and it was thought probable that there was thrombosis of the vessels spreading across the chiasma. Two months after the onset the right disc showed signs of post-neuritic atrophy, and the left showed signs of primary atrophy. Three months after the onset the patient left the hospital, with no obvious loss of power in the legs, and with no difficulty in micturition; but he was completely blind.

Dr. James Taylor and Dr. J. Collier published a series of 12 cases of ocular lesions associated with spinal disease, in *Brain*, 1901, p. 532. Five of these are included by Dr. Hillion in his thesis as cases of optic neuromyelitis. In the other seven cases the spinal lesions were: Chronic myelitis, 1; spastic paraplegia, 1; caries of the spine, 1; fracture-dislocation, 1; hæmatomyelia, 1; and tumour of the spinal cord, 2. The interest of these latter cases is that they show that the spinal lesion associated with the optic neuritis is not necessarily an acute inflammation; and hence the difficulty of explaining the occurrence of the ocular lesion in neuromyelitis optica is increased. Dr. James Taylor and Dr. Collier show that the spinal lesion frequently, if not always, reaches as high as the upper dorsal or cervical region of the cord.

Wotton-under-Edge.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held on March 14th at Caxton House, Westminster, with Sir Francis H. Champneys in the chair. A letter was considered from the medical officer of health for Devonport inquiring: (1) As to the giving of a certificate of stillbirth by a midwife; (2) as to the attendance at a confinement of a pupil midwife not under the immediate supervision of a certified midwife; (3) as to whether, in the opinion of the Board, a midwife's superficial examination of the dead body of a child entitles her to certify that the child has not breathed. The Board directed that the medical officer of health for Devonport be informed that the replies to his questions are as follows: (1) That the midwife was wrong in giving a certificate of stillbirth as she was not present at the birth; (2) that the trainer is responsible for each case attended by a pupil; (3) that this question is covered by answer (1). A letter was considered from an inspector of midwives as to the extent of the obligation to attend to the comfort of the mother and child entailed on a midwife by Rule E. 11. The Board decided that the reply be that the midwife is responsible if the baby is not properly cared for.

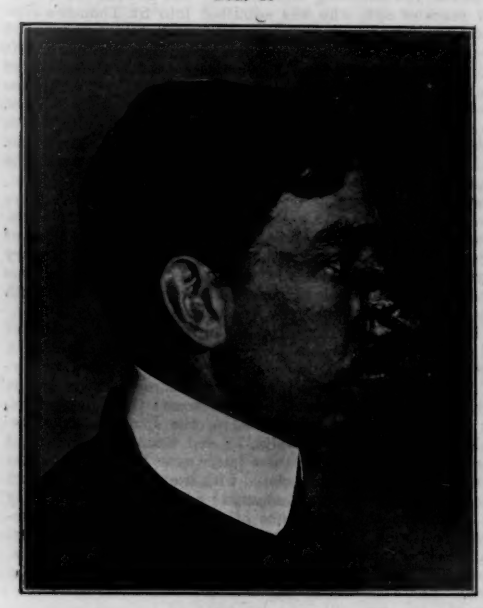
DECORATIVE SURGERY.

BY W. H. BATTLE, F.R.C.S. ENG.,
SURGEON TO ST. THOMAS'S HOSPITAL.

THE following three cases illustrate the importance of this branch of the surgeon's art to which allusion was recently made in an annotation in THE LANCET.[1] They also illustrate the fact that there is usually more than the mere appearance of the patient to be considered. In the two cases with vascular growths it was necessary to operate because of the increase in the disease; whilst in the cirsoid aneurysm there was also the danger to the life of the patient because of the liability to hæmorrhage which so often proves fatal when these growths have become large. In the third case removal was imperative to enable the man to follow his occupation.

CASE 1.—In the year 1906 a patient was sent to me with a letter from Dr. P. Clennell Fenwick, of Wanganui, New Zealand. This patient, aged 24 years, had considerable disfigurement of his face in consequence of a congenital hæmangioma which affected it and the upper lip. He was not a man of means, and in order to assist the sum which he was able to get together for the expenses of the trip he offered himself as a steward for the voyage. The agents of the shipping company refused to allow him to take the post because it was thought that the passengers would be upset by his appearance. A few days after his arrival he was admitted to St. Thomas's Hospital, and remained there from June 18th to Sept. 12th, some weeks after which he returned to New Zealand.

FIG. 1.



Pulsating nose, side view.

FIG. 2.

Pulsating nose, front view.

The reproductions of the photographs (Figs. 1 and 2) show very well the general appearance of the nose. This caused him no pain, but he was much worried by the observations which were made about his appearance by strangers, and he found it difficult to get employment. On more than one occasion he had suffered from hæmorrhage. The nose was very large, appeared bulbous, was of a purplish-red colour, with some superficial dilated veins, and visibly pulsated all over. To the touch it was rather compressible, diminishing much in size, and rapidly filling out again when pressure was relaxed. The condition extended upwards between the eyes and downwards into the mid-portion of the upper lip, which was large and prominent. There was not much change in the mucous membrane of the nostrils.

On July 11th ligatures were applied to the external carotid, the superior thyroid, and the facial arteries on both sides. After these wounds had been closed the whole of the disease of the nose was cut away, leaving only the bony and cartilaginous framework. On the 15th electrolysis of some outlying portions of tissue was done. On the 27th this operation was repeated and the central portion of the lip was excised with part of the columella nasi. On August 3rd a flap of skin from the forehead was turned down after the Indian method to cover the granulating surface. It was adapted by its size and saddle-shape to cover the granulating surface, but no columella nasi was required, it being sufficient to excise a median portion, as the whole columella was too thick. On the 27th the denuded surface was grafted.

Dr. Fenwick has recently told me that the result of the operation at the present time is very satisfactory, as the man is pleased with his improved appearance and is able to make a living in an occupation which takes him much amongst strangers.

CASE 2.—In the case of the baby (shown in Figs. 3 and 4), under care in the children's ward, St. Thomas's Hospital, 1909, the nævoid growth gave him a wonderfully ancient appearance. It was, however, of limited extent, without pulsation, and yielded to treatment by electrolysis and the application of nitric acid. Nævoid growths on the nose are not very uncommon, but they do not often produce such a grandfatherly aspect as that which we found here.

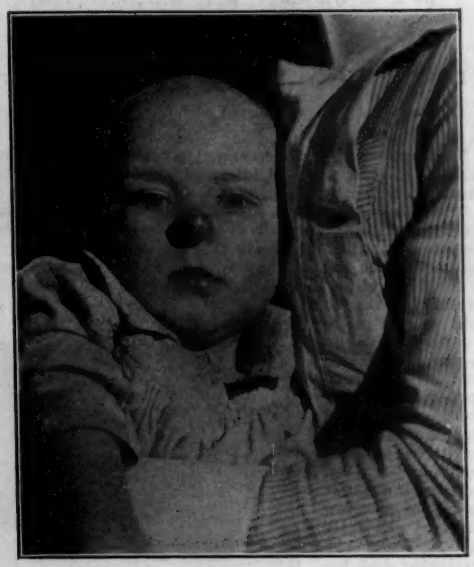
CASE 3.—Figs. 5 and 6 show the common disease of lipoma nasi, or rhinophyma, and is only interesting from the fact that the patient had to have an operation. He was a tailor, and said that he did not care about his personal appearance, but was unable to work because his nose prevented his seeing to thread his needle. For some time he had managed by holding his nose down and his hands high up, but recently this expedient had failed him, and he was obliged to seek surgical assistance. The disease was treated in the usual manner, and he was much pleased with the result.

[1] THE LANCET, Jan. 6th, 1912, p. 38.

FIG. 3.

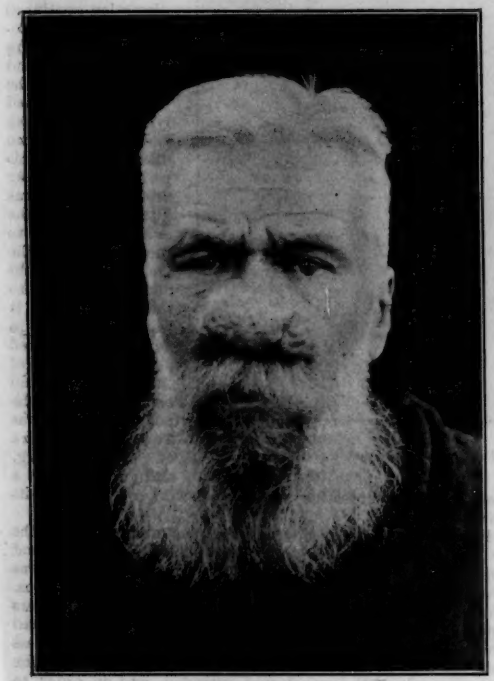
Nævus of nose, side view.

FIG. 4.



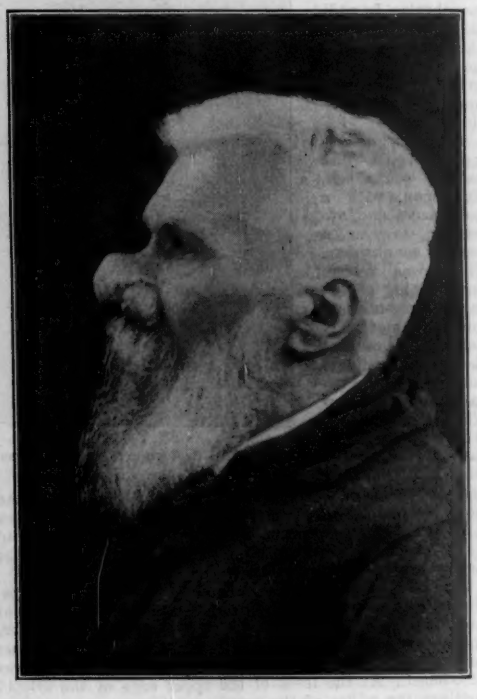
Nævus of nose, front view.

FIG. 5.



Rhinophyma, front view.

FIG. 6.



Rhinophyma, side view.

Note.—The chief interest of these cases lies in the extent of the disease which is shown in the illustrations. It is a matter of regret that I am unable to produce photographs of the patients as they appear now, but from the notes it will be seen that the result in the case of the adults was satisfactory, whilst in the second case there has been no return of the nævus and the mother appears satisfied.

A CASE OF PHARYNGEAL DIVERTICULUM.

BY E. B. WAGGETT, M.A., M.B., B.C. CAMB.,
SURGEON TO THE NOSE, THROAT, AND EAR DEPARTMENT, CHARING CROSS HOSPITAL;
AND
EDWARD D. DAVIS, M.R.C.S. ENG., L.R.C.P. LOND.,
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THE number of reported cases of pharyngeal diverticulum is small, and the points of interest in the treatment of this case make it worthy of publication.

The patient, a labourer, aged 40, formerly a soldier, complained of difficulty in swallowing, and he stated that for the past five years he had always returned a small quantity of food after each meal. These symptoms gradually increased in severity, and for the last three months he had noticed a swelling on the left side of the neck, which increased in size after taking food. If he compressed the swelling about an ounce of food and saliva regurgitated into the mouth, and this had increased in quantity during the past few months. Recently the difficulty in swallowing had become more marked towards the end of a meal, being distinctly noticeable after the first few mouthfuls. In addition he volunteered the statement that he was "short of breath" after food and on slight exertion.

Condition on examination.—The patient was a tall, thin man, with a long neck, and appeared to be a healthy countryman. There was fulness and bulging of the left sterno-mastoid muscle immediately below the level of the cricoid cartilage, and the swelling became more marked after taking food. On giving the patient food he was able to swallow the first few mouthfuls without trouble, but in order to take more he had to turn the head to the right and to flex the neck. By compression of the pouch he was able to return about half a teacupful of food. Examination by the laryngoscope showed a normal larynx and trachea.

The patient was then examined by the œsophagoscope. The pouch was emptied by compression, and the patient directed to wash it out by drinking and regurgitating water. The pharynx was then swabbed with a solution of 20 per cent. cocaine and adrenalin, and the œsophagoscope was introduced. At the level of the upper edge of the cricoid cartilage the orifice of the œsophagus was seen as a narrow slit, but on the posterior wall a larger opening was seen through which the tube passed easily, but after this point the view was obstructed by frothy saliva.

The tube could be passed another three inches, but was then obstructed. From this it was gathered that the pouch was about three inches in length. The tube could be passed into the œsophagus and no stricture was observed, but at this stage the patient became intolerant.

The radiogram taken after a bismuth meal, by Dr. Ironside Bruce is depicted, and was most valuable. The pouch was shown on the left side of the œsophagus and extended behind the clavicle.

With the X ray screen a flexible bougie which had been introduced could be seen in the œsophagus, and was obstructed about 10 inches from the teeth. The first few mouthfuls of the bismuth meal could be seen as large boli passing rapidly down the œsophagus, but as the pouch filled the boli became smaller and swallowing became more difficult.

Operation.—On Oct. 8th, 1910, Mr. Waggett operated and invaginated the pouch, a method described by Professor Girard.[1] The pouch was previously washed out by the patient swallowing and regurgitating boric lotion; he emptied the pouch by compression of the neck immediately before taking the anæsthetic. Chloroform was given without the administration of morphia or atropine.

Radiogram taken by Dr. Ironside Bruce after a bismuth meal.

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It was found to open from the posterior wall of the œsophagus above the level of the cricoid constriction and opposite the cricoid cartilage. After careful isolation it was invaginated and pushed downwards into the œsophagus. There was no stricture of the œsophagus, and two fingers could be passed downwards with ease. When the pouch had been invaginated, its orifice appeared to be a small slit less than one inch in length in the wall of the œsophagus. If the patient vomited the pouch was extruded, and in order to produce vomiting the anæsthetic was stopped and the fauces tickled. Finally, the pouch was again invaginated and the slit-like orifice in the wall of the œsophagus was closed by one layer of four interrupted silk sutures. The patient was again made to vomit and the pouch proved to be secure. It remained in the œsophagus and was not again extruded. A

drainage-tube was inserted at the lower end of the wound, which was closed by deep and superficial stitches. A Symonds's œsophageal tube was passed through the nose into the stomach, but it was vomited on recovery from the anæsthetic. The tube was not reintroduced because its presence promoted vomiting and worried the patient.

The next day the patient swallowed 4 oz. of water without discomfort and was ordered soup and beef-tea. In addition he was given rectal enemata of glucose and saline, and from this point he made an uninterrupted recovery. The wound healed by first intention, the drainage-tube was removed on the fourth day, the patient got up on the sixth day, and he left the hospital on the fourteenth day.

On Jan. 27th, 1911—i.e., 3½ months after the operation—the patient was seen again, and said he could swallow anything without difficulty. He was examined with the laryngoscope and œsophagoscope, and the invaginated pouch could be seen as a pale polyp projecting upwards immediately behind the cricoid cartilage. It was proposed to admit the patient and to remove the polyp with the cautery snare introduced through the œsophagoscope. The patient was to have been shown that afternoon at the Polyclinic, but unfortunately he disappeared.

In August, 1911, the patient returned complaining that he had sneezed violently and felt "something break in his neck," and after this occurrence the old symptoms of difficulty in swallowing returned. The swelling of the neck was noticed, and a radiogram, following the bismuth meal, showed a pouch in the same position as before and of about the same size.

Second operation.—Mr. Waggett operated again on Oct. 5th, 1911, and on this occasion the pouch was isolated without difficulty. It was slightly adherent to the surrounding parts, but in other respects had exactly the same appearance as on the first occasion, being covered by the close network of veins, which had somewhat limited the number of stitches inserted at the invagination operation. The neck of the pouch was clamped and divided between forceps. The stump was carefully stitched with a continuous silk suture and then buried by a layer of Lembert sutures. The wound was closed and drained as before.

The after-treatment consisted of keeping the patient in the recumbent position with the head low. He was fed by rectal enemata for three days and then allowed to take water by the mouth; this was not followed by leakage through the wound. On the sixth day he was given soft solid food. He made an uninterrupted recovery, and the wound healed by first intention, with the exception of the point where the drainage-tube was inserted, and that healed a few days afterwards. When the patient left the hospital he could swallow without the slightest difficulty or discomfort.

Remarks.—The following remarks are based upon a careful perusal of the records of cases of diverticula of the pharynx and œsophagus reported in English.

The symptoms and signs in the case recorded above were so well marked that the patient and his friends had made the diagnosis. The regurgitation of food, which increased with compression of the neck, was the most prominent symptom, and occurred in all the recorded cases; in the early stages it was difficult to differentiate cases of diverticula from those of stricture. The radiograms were most valuable, more especially after the recurrence of the pouch.

Anatomically this case corresponds exactly with that series of ten cases of retro-cricoid diverticula of the pharynx collected from the London museums, and described by Professor Arthur Keith in his demonstration at the Royal College of Surgeons of England. The demonstration is reported, and the reader is referred to the excellent description and diagrams of the report.[1] Professor Keith showed that these diverticula were sacs composed of the mucous and submucous coats, which had become gradually evaginated between two definite parts of the inferior constrictor muscle, consisting of the upper part, which acts as a force-pump, and the lower part, which is sphincteric in nature.

The observations made at the time of the operations in the above case, with the examination and microscopy of the sac, correspond in every detail with Professor Keith's description. The case recorded above was a propulsion pouch which originated from, first, a weakness of the œsophageal wall; secondly, increased pressure within the œsophagus. It will be seen that it corresponds in pathology to a hernia through the abdominal wall.

With reference to the first factor—*weakness of the œsophageal wall*—Professor Keith has established the fact that there is a weakness in the position indicated above. Professor Halstead,[2] in a paper in which he discusses the cause of propulsion diverticula, refers to a weakness in the posterior wall of the œsophagus immediately below the inferior constrictor muscle.

The late Professor Birmingham[3] described a triangular interval in this position, which is formed by a separation of the longitudinal muscular fibres into two bands which diverge and pass upwards on the front of the œsophagus and are attached by a tendinous band to the upper part of the back of the cricoid cartilage. The triangular interval, which is about 1¼ in. in length and is formed by the diverging bands of longitudinal muscular fibres, is sometimes known as the Lannier Hackerman area. The narrowest part of the œsophagus and the circular fibres of the inferior constrictor, known as the cricoid constriction, are above this point. Halstead records in the same paper the case he treated by invagination of the sac, in which the neck of the sac was below the lower edge of the cricoid cartilage and the sac apparently became evaginated through the Lannier Hackerman area of the œsophageal wall.

Mr. William Robinson[4] in the report of a case in which he excised a diverticulum, states that he dissected the œsophagus of a woman, and could not find the deficiency of the longitudinal muscular fibres in the triangular interval described above, but Professor Birmingham has clearly demonstrated that the deficiency does exist. The pouch in Mr. Robinson's case was connected to the œsophagus at its extreme upper end.

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One of the authors (E. D. D.) dissected a few specimens of the œsophagus obtained from recent necropsies, and the triangular interval in the longitudinal muscular coat was not easily made out. When the dissected œsophagus was subjected to water pressure by attaching one end to the tap and securing the other there was a uniform dilatation of the œsophagus below and above the circular and sphincter portion of the inferior constrictor. The circular fibres of the constrictor appeared as a waist belt, and no weakness could be demonstrated on the wall of the œsophagus immediately below the inferior constrictor. Moreover, small incisions were made through the longitudinal muscular coat and prolonged water pressure applied, but neither sacculation nor dilatation occurred at the incisions, showing that the remaining portion of the wall of the gullet was strong enough to resist any protrusion of the mucosa.

Halstead also refers to cases recorded by Freiburg, and others in which the œsophageal wall was weakened by traumatism, the result of impaction of a foreign body or by rupture in cases of severe injury. In these cases the diverticula developed rapidly, and resulted in starvation and death.

With reference to the second factor in the cause of propulsion diverticula—*increased pressure* within the œsophagus—in a few cases there was a stricture, but in most neither stricture nor stenosis of the œsophagus was discovered. Professor Keith has drawn attention to the circular fibres forming the lower part of the inferior constrictor, which acts as a sphincter, and in the case recorded above this circular band was well developed, producing a possible functional stenosis below the pouch. In Professor Halstead's case it will be noted that this constriction was stated to be above the opening of the pouch, and this fact does not support his theory that diverticula evaginate through the Lannier Hackerman area. A similar condition appeared to have existed in Mr. Bilton Pollard's case, to which reference has been made.

Stenosis of the œsophagus has been known to produce dilatation of the tube above the point of stenosis. One of the late Sir H. T. Butlin's[7] cases (Case 6) was a wind instrument player, and the increased pressure produced in the œsophagus by such an occupation was considered to be a determining factor in the formation of the pouch he developed. Even a persistent severe cough is recorded as being a possible cause (Bilton Pollard).

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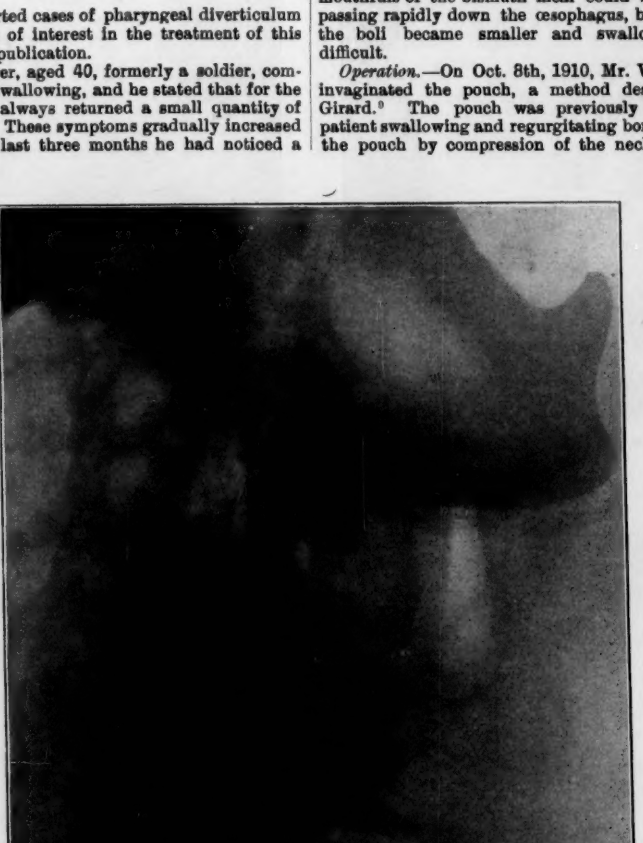

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The theory that these pouches are of congenital origin has been abandoned for several reasons.

The most successful treatment of diverticula of the pharynx is by operation. Richardson[8] states that of the 56 cases recorded before May, 1900, 18 were treated by operation, 16 of the 18 by excision, and 2 by the invagination method described by Girard.[9] Since 1900 Butlin has recorded 12 cases, in 8 of which the pouch was excised. Charles Mayo[10] recently records 8 cases; 6 were excised.

Halstead recorded one case of invagination, but in a recent private communication he states that he has had two more cases of diverticula. In one case the diverticulum was dissected out of its environs, and left intact outside the neck until the cavity occupied by the diverticulum had closed, and then at the second operation the diverticulum was removed, after the danger of mediastinal infection had passed. Unfortunately, the patient died from pneumonia. In the other case the diverticulum was successfully resected and the stump invaginated by sutures. W. Robinson, Bilton Pollard, and W. Taylor recorded three more cases treated by excision.

In the majority of the recorded cases of excision there was leakage of food into the neck, and the resulting risk of infection. For that reason Mr. Waggett decided to treat the above case by invagination. Of the two cases of invagination recorded by Girard one case was eminently successful, but in the second case a fistula resulted, and closed later.

Halstead describes his case of invagination more minutely, in which he put a purse-string suture around the neck of the sac and invaginated it, and covered the stump with three layers of sutures. The patient did well and made an uninterrupted recovery. Halstead states that invagination is only suitable for those cases in which the sac is small, and the lumen of the œsophagus is normal.

In some cases of emaciation and starvation a preliminary gastrostomy was performed, but it was unnecessary in our case. In one case, that of an old man, the patient was taught to empty the pouch by compression and to syringe it out with boric lotion after taking food, but he was ultimately operated on with success.

Recurrence of the pouch after excision appears to be rare. Butlin records that seven of his cases had no recurrence of the symptoms and that all of the seven patients were well. Mr. Bilton Pollard's case was quite well two years after the operation. An attempt to ascertain whether the three cases of invagination reported by Girard and Halstead had recurred was unsuccessful. No later information concerning cases of invagination could be obtained.

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THE DIETETIC TREATMENT OF DIABETES.

BY P. J. CAMMIDGE, M.D. LOND.

ALL attempts at a specific or etiological treatment of diabetes have so far proved unsatisfactory, so that careful dieting is still the only reliable means we have of combating the condition. The more intimate knowledge, gained in recent years, of the chemical disturbances that are associated with glycosuria has placed the principles of its dietetic therapy on a much surer foundation, and permits of more accurate and scientific means being taken to adjust the food-supply to the metabolic powers of the body than was formerly the case. The aim of the modern treatment of diabetes is to balance the diet in such a way that nutrition is as perfect as possible without there being an unnecessary strain on the organs of metabolism in any direction.

It is now generally recognised that, while the administration of carbohydrates in larger amounts than the defective metabolic powers of the diabetic can deal with is injurious, their permanent exclusion from the diet is often not only unnecessary but positively harmful. A temporary exclusion is in some instances necessary and beneficial, for not only is the excess of sugar in the blood diminished so that the cause of many of the troubles to which diabetics are liable is lessened or abolished, but at the same time the metabolic powers, like a released spring, often recover their tone to a surprising extent, and the tolerance for carbohydrates is materially increased. Similar results are obtained in other cases by restricting the carbohydrates, both in quantity and kind, until the glycosuria is controlled.

Some diabetic patients have a marked susceptibility to proteins, which may yield 45, and in some instances 60, per cent. of sugar, so that their glycosuria is diminished more by restricting the protein intake, and allowing carbohydrates, than by excluding the latter altogether. The proteins of vegetables are, as a rule, found to be less harmful than those of meat, and consequently periods of vegetable feeding may be advantageously introduced into the treatment. For the same reason prepared vegetable proteins, soy beans, &c., may be made to replace meat to some extent in the ordinary diabetic diet.

No routine line of treatment, however sound it may be in principle, can be applied to all cases; the metabolic powers of each patient must be experimentally determined, and a diet adapted to his peculiarities and requirements be worked out—that is to say, we must treat the *patient*, not the *disease*.

Having discovered that a patient is passing sugar in his urine, the first point to settle is the gravity of the case. For this purpose we must ascertain: (1) the intensity of the diabetes; (2) the presence and degree of secondary abnormalities of metabolism; and (3) whether any disturbance of nitrogenous equilibrium exists. To this end the urine passed in 24 hours is collected, measured, the usual qualitative tests performed, and the total excretion of sugar, nitrogen, and ammonia nitrogen quantitatively determined.

1. In order that an accurate estimate may be formed of the power the patient possesses of dealing with sugar—that is, of the intensity of the diabetes—it is necessary that the intake, as well as the output, should be known. The latter is given by the urinary analysis; for the former the patient is put upon a diet of known composition, both as regards quantity and kind, for 48 hours before the urine is collected.

Since the amount of dextrose in the urine is dependent not only upon the quantity of ingested carbohydrate, but also upon the intensity of protein metabolism, the possible maximum of sugar that can be derived from broken-down protein must be included in the intake. According to Rubner, each gramme of protein nitrogen may correspond to 5 grammes of dextrose, so that if the total urinary nitrogen is multiplied by 5 the result will represent the sugar that may possibly be derived from protein, and this, plus the carbohydrate of the food, will represent the total sugar available for nutrition. If now the total output of sugar in the urine is divided by the total available sugar a figure is obtained that indicates the relationship between the two. Multiplied by 100 this figure gives the percentage of sugar eliminated unused, or Falta's "coefficient of excretion."[1]

On the ground that experiment has shown a constant dextrose to nitrogen ratio of 3·65 to 1 in the urines of dogs in which glycosuria has been produced by injections of phloridzin, after their glycogen store has been exhausted, and also in very severe human diabetes, when the patient was given a diet of meat and fat, Lusk[2] has suggested that the figures 3·65 should be substituted for 5 in determining the proportion of urinary sugar possibly derived from protein. This modified formula, which I now employ in my work, is stated as follows:—

$$\frac{\text{Total dextrose in the urine} \times 100}{(\text{Total urinary nitrogen} \times 3{\cdot}65) + \text{Food dextrose}} = \left\{\begin{array}{l}\text{Coefficient of}\\ \text{excretion.}\end{array}\right.$$

In collecting the urine for these analyses care should be taken that an early morning hour (before breakfast) terminates the 24 hour period. This is necessary, since the dextrose arising from the ingested proteid is eliminated before the corresponding nitrogen, and the long fast between the evening meal and breakfast allows of the excretion of both constituents.[3]

The coefficient of excretion may vary from 100 to 0, the former figure being obtained when there is total absence of tolerance for sugar, and the latter when carbohydrate intake and metabolism are balanced. It furnishes a definite numerical indicator of the severity of a diabetes in much

[1] Arch. Int. Med., 1909, p. 159.
[2] Journal of the American Medical Association, Dec. 17th, 1910, p. 2106.
[3] Lusk: The Science of Nutrition, 1906, p. 241.

the same way as a blood count and the hæmoglobinometer indicate the severity of an anæmia, or the thermometer shows the course of a fever. By determining the coefficient of excretion one case can be compared with another, and the progress of the same case can be judged from time to time more accurately than by the more commonly employed methods.

2. Of the secondary disturbances of metabolism that occur in diabetes, the most important is that associated with the imperfect oxidation of fats and proteins. The fatty acids contained in fats, and some of the oxy-acids formed in the breaking down of proteins, yield beta-oxybutyric acid if oxidation is incomplete. Thrown largely as it is upon its fat-burning powers to furnish the energy it needs, the diabetic organism may find that its capacity in this direction is also curtailed, with the result that beta-oxybutyric acid and its derivatives, aceto-acetic acid and acetone, are formed and excreted in the urine. The most serious result of the formation of these "acetone bodies" is the liability to diabetic coma. It is believed that they themselves are not toxic, but that they exert their poisonous effects in virtue of their acid properties; hence the condition in which they are present is spoken of as an "acidosis."

It is therefore important to detect the presence of these substances in the urine, and to estimate the degree of acidosis that exists. Unfortunately, there is no simple method for their quantitative determination, so that an indirect method of estimating the acidosis is very commonly employed. The index that is used is the amount of ammonia nitrogen that is excreted in 24 hours. Acids introduced into the blood are at first neutralised by sodium carbonate and other fixed bases, but when more acid enters the circulation than can be dealt with in this way a portion of the ammonia which normally goes to form urea is intercepted and combines with the acid, so that an increased amount of ammonia appears in the urine. The number of grammes of ammonia eliminated daily may be taken, therefore, as an approximate measure of the intensity of the acidosis. Normally from about 0·3 to about 1·0 grm. is excreted in the 24 hours, but in diabetes 2, 6, or even as much as 12 grm. may be passed. With an excretion of 3·0 grm. or over there is usually a danger of coma supervening.

3. The prognosis in cases that show signs of abnormal acid production is not, however, necessarily serious, for diabetics have been known to excrete 30 or 40 grm. of beta-oxybutyric acid daily and yet live comfortably for years.[4] According to Weintraud[5] acidosis is only dangerous when it is accompanied by a disturbance of nitrogenous equilibrium—that is to say, when more nitrogen is excreted than is being absorbed. For clinical purposes sufficiently accurate data for determining the nitrogenous balance are obtained by comparing the nitrogen-content of the food, estimated from diet tables, and allowing 1 grm. of nitrogen for each 6·25 grm. of protein, with the nitrogen excretion in the urine, plus 1 grm. to represent the unabsorbed nitrogen in the fæces, for a difference of one or two grammes a day is practically unimportant.

From the information obtained by these investigations there can be formed an accurate opinion as to the severity of the case, its prognosis, and the lines along which the treatment must be directed. It is advisable that the urine and fæces should, as a preliminary measure, be also examined for evidences of pancreatic disease, biliary affections, and intestinal trouble, so that means may be taken to deal with them if present, and thereby remove a possible source of metabolic disturbances which interfere with nutrition and may possibly be a factor in the production of the glycosuria.

When working out a diet for a diabetic it is important to bear in mind that he must be supplied with approximately 34 or 35 calories per kilogramme of his body weight, and that these must be contained in materials which experiment shows he can utilise. It is therefore necessary to ascertain, first, how much, and what kinds, of carbohydrate can be used with safety to supply the needful energy; secondly, what amount of protein is required to maintain nitrogenous equilibrium; and, thirdly, how much fat must be added to the diet to make up the balance of energy required. The answers to these problems can only be obtained by metabolic experiments, controlled by analyses of the urine and careful regular weighing of the patient.

The amount of carbohydrate that can be safely allowed is worked out by adding known quantities of various carbohydrates to a "carbohydrate-free" diet and watching the effect on the urine. If the patient has a low coefficient of excretion, the output of ammonia is not high, and nitrogenous equilibrium is well maintained—that is to say, it is a mild case—he should be put upon a diet containing about 3 oz. (85 grm.) of bread, which corresponds to about 47 grm. of added carbohydrate. If the urine is found to be free from sugar upon this, the daily amount of bread is gradually increased until glycosuria reappears. If, on the other hand, 3 oz. of bread are sufficient to cause sugar to appear in the urine, the amount is gradually reduced until either the glycosuria ceases or a "carbohydrate-free" diet is reached. In the former case, as in the first instance, the limit of tolerance for bread is that amount which just falls short of producing glycosuria.

In any case it is generally advisable to place the patient on a diet containing no added carbohydrate for a week or two, when his tolerance is again tested. In most cases it will be found to have increased, and may in some instances approach the normal. It is now tested for other forms of carbohydrate by adding weighed quantities of these to the "carbohydrate-free" diet on separate days. Finally, a mixed diet containing a little less carbohydrate than has been found to be the toleration limit, and calculated to yield the requisite number of calories, is worked out from these data. It will be generally found that some sources of sugar are better borne than others, and by selecting several of those that appear to be most suited to the idiosyncrasies of the case considerable variety can be given to the diet, a most important consideration from the patient's point of view. Every two or three months the collected 24 hours' urine should be re-examined and the diet changed according to the metabolic findings.

The procedure with severe cases, where the coefficient of excretion is high and there are well-marked secondary disturbances of metabolism, is necessarily different, for we have here not only to consider defective carbohydrate utilisation, but also the deficient powers of dealing with proteins and fats. The first thing to do is to restore the nitrogen balance as much as possible. As a preliminary step the sugar in the urine must be reduced to the lowest limit consistent with safety, since diuresis is thereby diminished, and nitrogenous equilibrium is impossible with an excretion of more than 1200 or 1500 c.c. of urine a day. It is usually unwise to attempt to remove all starchy foods from the diet and to render the urine sugar-free. Most patients will be found to do better when one variety is given alone than when several are taken together, and some kinds will generally prove to be more suitable than others, hence the introduction of the so-called oatmeal, potato, and rice "cures" for diabetes. The next step is to reduce the nitrogenous food until only 100, 80, or even 60 grm. of protein are being taken in the day and not more than 12 or 15 grm. of nitrogen are appearing in the urine. Rest in bed and small doses of codeia or opium are useful aids in obtaining nitrogenous equilibrium. Vegetable proteins and eggs may be substituted with advantage for an equivalent amount of meat, especially when there is marked and persistent acidosis. Periods of entirely vegetable and egg diet at intervals are also useful in controlling this condition.

The balance of the dietary must be made up with fat, for although the acetone bodies are chiefly derived from fat, very large additions to the diet are necessary to appreciably influence their output. Since the lower fatty acids are more prone to induce acidosis than the higher, substances containing them, such as unwashed butter, should be avoided. A diabetic with no tolerance for carbohydrate will require from 200 to 300 grm. of fat a day, according to his weight, but in order that such a large amount may be consumed all the resources of the kitchen and the art of the physician will be severely taxed to present it in an appetising and assimilable form. Spirits and dry wines are of distinct value in preventing the digestive disturbances that a richly fatty diet is liable to cause, but the total alcohol-content of these should not exceed about 40 grm. a day.

The experimental data obtained in the course of the investigation of a case of glycosuria, or other disorder of metabolism, are most conveniently collected together in the

[4] V. Noorden: v. Leyden's Handbuch der Ernährungstherapie, 1904, ii., p. 253.

[5] Therapeutische Monatschrift, December, 1908.

form of a chart, prepared by plotting out the results on squared graph paper. In this way the bearings of the urinary analyses on the diet, and the relations of one analysis to another, are much more readily and clearly appreciated than when the figures alone are studied. The specimen charts Nos. 1 and 2 indicate the way in which the method is employed, but for the sake of clearness all the data have not been inserted, as this necessitates the use of coloured inks.

CASE 1.—The patient was sent to me by Dr. J. Brunton Blaikie. The case was a serious one with a coefficient of excretion of 84 per cent., and an ammonia nitrogen excretion of 1·2 grm. in the 24 hours, on a diet containing 76 grm. of carbohydrate, including 3 oz. of bread. On reducing the bread to 2 oz. the coefficient of excretion fell to 66 per cent., but even with no added bread and a diet containing only 20 grm. of carbohydrate, it stood at 65 per cent., and the ammonia nitrogen rose to 1·8 grm. in the 24 hours. By cutting down the proteins of the diet the coefficient of excretion was reduced to 62 per cent., and the ammonia nitrogen excretion dropped to 1·5 grm. His tolerance for different forms of carbohydrate was tested by adding dextrose (25 grm.), levulose (25 grm.), milk (1 pint), oatmeal (3½ oz.), potato (3½ oz.), and apple (5 oz.) successively to the test diet, with the results shown in the chart. From these it is apparent that both pure dextrose and pure levulose were utilised with difficulty, but that the carbohydrates contained in oatmeal and potato were metabolised comparatively well. The addition of milk, oatmeal, and potato was found to be followed by a reduction in the output of ammonia nitrogen, so that they apparently diminished the acidosis. A diet based upon these results was worked out and taught to the patient. At the end of his stay in the nursing home he was put upon a diet containing 24 grm. of carbohydrate, and it was found that his coefficient of excretion had fallen to 55 per cent., as compared with 65 per cent. when the treatment was commenced, so that his power of dealing with carbohydrate had improved by about 10 per cent.

CASE 2.—Chart 2 illustrates the results obtained with a less severe case, sent to me by Dr. L. Vernon-Jones. In this instance restricting the carbohydrate was followed by a marked diminution in the percentage of food sugar passed unused in the urine, and by a progressive decrease in the excretion of ammonia nitrogen, whereas in the former case it caused a rise in the ammonia nitrogen and only a comparatively slight decrease in the coefficient of excretion. With a diet containing 85 grm. of carbohydrate, including 3 oz. of bread, the coefficient of excretion worked out at 43 per cent., with an ammonia output of 0·87 grm. in the 24 hours. The same diet with 2 oz. of bread gave a coefficient of excretion of 24 per cent. and an ammonia output of 0·68 grm. On a test diet containing 23 grm. of carbohydrate a coefficient of 20 per cent. and an ammonia nitrogen of 0·57 grm. were obtained. In this case there was no serious interference with nitrogenous equilibrium, so that it was neither necessary nor advisable to reduce the protein content of the food. On testing his carbohydrate tolerance with dextrose (50 grm.), levulose (50 grm.), milk (1 pint), oatmeal (3½ oz.), and potato (3½ oz.), it was found that levulose was more readily metabolised than dextrose, and that 1 pint of milk, 3½ oz. of oatmeal, 3½ oz. of potato, and 2 oz. of bread gave approximately the same coefficient of excretion. His diet was therefore worked out on this basis. A test diet containing 24 grm. of carbohydrate given at the end of the investigations showed a coefficient of excretion of 11 per cent., as compared with 20 per cent. at the beginning, and an ammonia nitrogen excretion of 0·55 grm.

CHART 1.

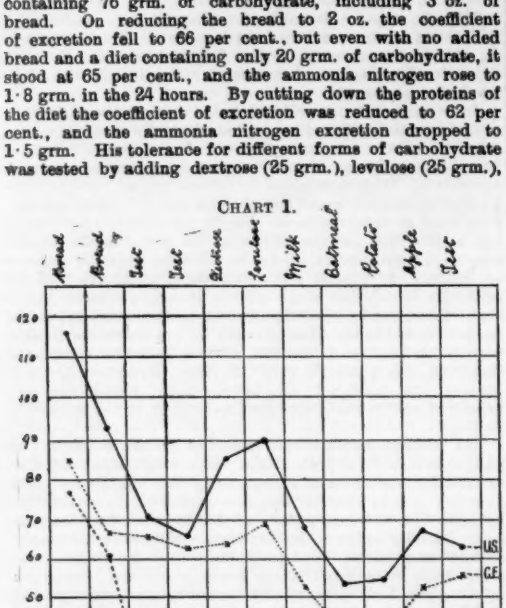


Chart of Dr. Brunton Blaikie's case.

U.S., Urine sugar. C.E., Coefficient of excretion.

CHART 2.

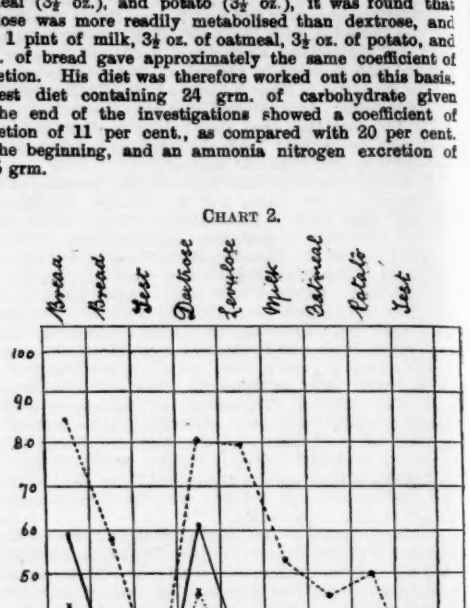


Chart of Dr. Vernon-Jones's case.

F.S., Food sugar. AM., Ammonia N (× 10).

In the treatment of diabetes everything depends upon systematic dietetic measures being instituted at as early a stage as possible, for the whole future of the case depends upon its management at this period. It is exceedingly important that the diet should be prescribed quantitatively, as well as qualitatively, and this is true, not only of the well-marked cases, but also of the mild forms, and even of transient glycosuria, which, if neglected, may pass later into typical progressive diabetes. To merely give a patient lists of foods that he may take, and must avoid, is less than half the battle. What he needs to be taught is how much of each permitted food he may, and must, take to keep up the supply of energy he requires. At first all his food must be weighed, but it is remarkable how quickly the eye can be trained to accurately estimate weights and measures, and after a time only an occasional appeal to the balance is necessary. One useful purpose that the preliminary experimental investigations serve is to provide an opportunity for such education, since observations of this nature can only be satisfactorily carried out in a nursing home or hospital, where the food is prepared under strict supervision, and both it and the excreta are accurately weighed and measured.

Nottingham-place, W.

THE IMMEDIATE RESULTS OF SANATORIUM TREATMENT

CONTRASTED WITH THE RESULTS OBTAINED BY A COMBINED SANATORIUM AND TUBEROULIN TREATMENT.

BY J. A. D. RADCLIFFE, M.B. R.U.I.,
PATHOLOGIST, KING EDWARD VII. SANATORIUM, MIDHURST.

WHILST the final judgment as to the value of any form of treatment in pulmonary tuberculosis must rest on the ultimate results, as shown by the after-histories of the cases, still some information can be obtained by an examination of the immediate effects. The most important result is the disappearance of the tubercle bacilli from the sputum, for if the treatment has effected this the patient has ceased to be a potential source of infection for those with whom he is brought into contact.

It has now been conclusively proved that practically all cases of pulmonary phthisis are due to infection with the human type of bacillus. Kossel[1] in a recent analysis gives the following figures: Number of cases investigated, 709; of these, 705 are human, 2 are certainly bovine, 1 due to a mixture of human and bovine, and 1 doubtful). Consequently, the serious source of infection is the patient with tubercle bacilli in his sputum. Any form of treatment, therefore, which can largely reduce the percentage of such cases is the one to be preferred, particularly from the public health standpoint.

At the present time the chief methods of treatment in pulmonary tuberculosis are: (1) the sanatorium, with or without graduated labour; and (2) tuberculin, either alone or preferably combined with the sanatorium.

It is of interest to compare the immediate results given by these two methods, taking as a standard for comparison the presence or absence of tubercle bacilli in the sputum at the termination of the treatment. For this purpose I have compared the results obtained in the King Edward VII. Sanatorium, without tuberculin, with those of some of the foremost sanatoriums in Germany, where tuberculin has established itself as an essential part of the treatment.

1. *Sanatorium Treatment Alone.*

The cases coming under this heading are all those admitted here during the past four years who fulfil the following conditions: (*a*) Have tubercle bacilli present in the sputum on admission; (*b*) remain a minimum period of 12 weeks under treatment. This latter condition excludes a fair number of severe and advanced cases who are admitted for one month "on probation," and whom it would not be correct to include as having undergone the open-air cure. Twelve weeks have been arbitrarily fixed as the lowest time admissible. During the four years under consideration 631 patients have been admitted who fulfilled the two conditions, and the immediate results are shown in Table I.

TABLE I.

Classification according to Turban-Gerhardt.	Total number of patients.	Number of patients who lost their tubercle bacilli.	Number expressed as a percentage.	Average stay in sanatorium in weeks.	Minimum stay in weeks.	Maximum stay in weeks.
Group I.	160	73	45·62%	20·16	12	46
„ II.	315	60	19·04%	21·82	12	63
„ III.	156	14	8·97%	21·03	12	61
Totals	631	147 =	23·3 %	—	—	—

The above table shows that of 631 patients, 147, or 23·3 per cent., lost their tubercle bacilli whilst under treatment in the sanatorium; and it also brings out very clearly the advantages of treatment (of the cases) before physical signs are well marked, for in Groups I. and III., which are almost equal in numbers, the percentages of those who became free from bacilli are 45·62 and 8·97 respectively—that is, the results in Group I. are more than five times as good as in Group III.

These figures are, on the whole, better than those obtained under similar conditions in Germany; as Loewenstein[2] states that the reports of the public sanatoriums (Volkheilstätten), which have paid special attention to this point, give a percentage of from 12 to 25 of the cases in whom sanatorium treatment alone has led to a disappearance of the bacilli from the sputum.

2. *Combined Tuberculin and Sanatorium Treatment.*

For this part I have taken the results published by some of the foremost of the German sanatoriums, which deal with large numbers of patients. First, Loewenstein[3] reports on the year 1909 in the *Heilstätte Beelitz der Landes-Invalidenversicherung*, Berlin. In his figures he includes all those who during treatment reached a state of immunity towards either 10 mg. of old tuberculin or 0·01 mg. of new tuberculin. His patients are only considered free from bacilli when the sputum has been examined with negative result on four occasions, using the antiformin method and always after an injection of tuberculin. This is a much more severe test than that to which our patients are submitted, and consequently makes his figures of very great value in estimating the effect of tuberculin treatment. He reports on 682 cases with tubercle bacilli present, who reached the state of immunity mentioned, and classifies them according to the variety of tuberculin with which they have been treated. His results are given in Table II.:—

TABLE II.

Treatment.	Total number of patients.	Number of patients who lost their bacilli.	Number expressed in percentages.
Old tuberculin	409	237	57·94
New tuberculin	204	86	42·15
Old and new tuberculin	69	38	55·07
Totals	682	361	= 52·93

Special importance is laid on the last group, in which both preparations were used, as these were severe cases belonging to the second and third stages. It is also pointed out that the results would have been even better if a higher state of immunity had been taken as the minimum, as it is only in a few cases that the "cure" is finished when 10 mg. has been reached. This amount was chosen because it is the maximum dose used in diagnosis.

Secondly, Bandelier[4] reports on 202 cases, with tubercle bacilli present in the sputum, who were submitted to the combined treatment, with the following excellent results:—

TABLE III.

Group.	No. of patients.	No. of patients who lost their bacilli.	No. expressed in percentages.
I.	10	10	100·0
II.	79	69	87·3
III.	113	50	44·2

Thirdly, Curschmann, of the Heilstätte der Badischen Landesversicherungsanstalt, is quoted by Bandelier and Roepke,[5] and gives the following results after a three months' combined treatment:—

TABLE IV.

Group I.	80% ...	Sputum negative at the end of the "cure."
„ II.	47·7% ...	„ „ „ „ „ „
„ III.	33·75% ...	„ „ „ „ „ „

In this table the numbers belonging to each group are not

[1] Kossel: Deutsche Medizinische Wochenschrift, 1911, p. 1972.

[2] Loewenstein: Handbuch der Technik und Methodik der Immunitätsforschung von Kraus und Levaditi, 1911; Erster Ergänzungsband.

[3] Ibid.

[4] Bandelier: Beiträge zur Klinik der Tuberculose, 1910, Band xv., Heft 1, p. 17.

[5] Bandelier und Roepke: Die Klinik der Tuberkulose, 1911, p. 163.

stated, but they are included as showing what can be accomplished by a three months' treatment. In the sanatoriums referred to tuberculin is given in small doses, gradually increasing in amount until very large quantities are tolerated, but avoiding as far as possible any severe reaction during the treatment. Reactions are even less likely to occur if the albumose-free tuberculin introduced by Koch be substituted for the old tuberculin. This can be followed, if necessary, by a course either of old tuberculin or, perhaps even better, by bacilli emulsion.

Summary.

1. With sanatorium treatment alone we can only reckon on 20 to 25 per cent. of all cases losing their bacilli as an immediate result of the treatment.

2. When a combination of tuberculin with sanatorium treatment is adopted, at least 50 per cent. of the cases will lose their tubercle bacilli.

3. The earlier the cases come under treatment the better the results. This is very strikingly shown in the tables in which the cases are considered in groups according to the stage of the disease.

4. A comparison of the immediate results is so much in favour of tuberculin that it is difficult to understand the opposition to its employment, both in treatment and diagnosis.

In conclusion, I wish to express my thanks to the consulting staff of the King Edward VII. Sanatorium for permission to publish this paper.

Midhurst.

ACUTE INTESTINAL OBSTRUCTION

CAUSED BY THE APPENDIX VERMIFORMIS, THE OBSTRUCTION OBSCURING AN ACUTE APPENDICITIS.

BY E. GILLESPIE, M.B. GLASG., F.R.C.S. ENG.,
ASSISTANT SURGEON, PRINCE OF WALES'S HOSPITAL, N.

THE following case illustrates an unusual combination of circumstances.

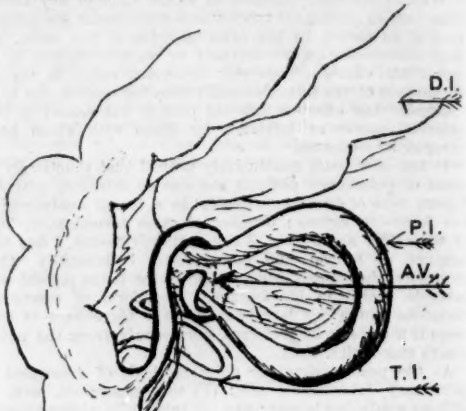
The patient, a male, aged 10, was admitted to the Prince of Wales's Hospital on Jan. 29th, 1912. The boy had always enjoyed good health. On Jan. 23rd he complained of abdominal pain localised round the umbilicus. He also vomited. The pain and the vomiting continued until admission, the latter becoming more frequent. The bowels were opened on the 24th, after an enema, but not since. On the 28th the condition was worse, and distension of the abdomen was noticed. The patient was admitted to hospital on the 29th.

Examination on admission.—The patient looked very ill. The face was cyanosed; the tongue furred and dry. Temperature 97° F., pulse 100, respiration 28. Before operation the patient had fæcal vomiting. The chest showed nothing abnormal. The abdomen was distended. Coils of intestine could be seen showing through the abdominal wall, and giving the step-ladder appearance of small intestine obstruction. The abdomen felt tense, but had not the rigidity of an inflammatory lesion. There was no localised tenderness on palpation. The movements with respiration were deficient. The percussion note all over was resonant. Rectal examination revealed a distended empty rectum; nothing abnormal was felt in the pelvis.

Operation (Jan. 29th).—Under general anæsthesia with open ether the abdomen was opened by the para-umbilical incision to the right of the middle line. Coils of distended and congested small intestine at once showed. On introduction the examining hand could feel a loop of intestine tightly constricted by a band. The portion of intestine was isolated and brought to the surface. The strangled loop was found to be about 18 inches of the ileum close to its lower end. The band was also a piece of intestine, stretched, and thinned out. Further search showed that it was the appendix vermiformis. It had encircled the loop, passing at first over and in front of it, then downwards behind. Finally, the tip appeared round the lower border and gained an attachment in front to the mesentery close to its junction with the gut. (See figure.) In addition the loop of intestine was rotated through about 90° from right to left of the patient on an axis lying in the length of the mesentery and at right angles to the intestine. It may be noted that this rotation was in the same direction as the appendix encircled the gut.

The appendix was freed and found to have a recent perforation close to the tip. The perforation had been sealed for the time being by the attachment to the mesentery. Appendectomy was performed. The intestine, which was quite viable, was returned into the abdomen. The incision was closed by a single layer of through-and-through sutures.

Subsequently the boy became weaker, and died on the following day (Jan. 30th).



Diagrammatic view of condition. D.I., Distended ileum above. P.I., Paralysed loop of ileum. A.V., Tip of appendix vermiformis attached to mesentery. T.I., Collapsed terminal portion of ileum. C.C., Caput cæci. The rotation is not indicated in the diagram.

Remarks.—1. Obstruction due to a Meckel's diverticulum in the above situation is well recognised. But a similar lesion caused by the appendix would seem to be much more rare. Treves quotes some cases in his "Intestinal Obstruction" in which the appendix after its tip had acquired a secondary attachment was the means of causing obstruction. In the case reported, however, the appendix was in an acutely inflamed state.

2. The position taken up by the appendix was a most unusual one. It is difficult to picture the sequence of events. To judge from the ease with which the appendix was separated the obstructing position must have been a recent one.

3. The complete obscuration of the signs of the appendicitis. The condition on examination pointed to an obstruction caused by a band or to kinking due to adhesion over a breaking down gland in the mesentery. Such, indeed, was the provisional diagnosis.

Harley-street, W.

ROYAL FREE HOSPITAL.—Sir Edward Durning Lawrence presided on March 13th at the Eighty-fourth Annual Court of Governors of this hospital. The report of the committee of management stated that the financial position of the hospital had been satisfactory. The statistical returns showed that the average cost per in-patient per week during 1911 amounted to £1 17*s.* 5¼*d.*, against £1 14*s.* 3*d.* in 1910; the cost per out-patient attendance amounted to 11$\frac{1}{16}$*d.*, compared with 10¼*d.* during the previous year. The total number of patients under treatment in the wards and out-patient departments during the year was 35,596. There were 2204 in-patients admitted, in addition to the 140 who were in the wards at the beginning of the year, thus making a total of 2344 in-patients for the year. The average stay of patients in the wards was 23 days. Reference was made by the chairman to the conclusion of negotiations for the acquisition of a large area of land in the rear of the hospital upon which a new out-patient department would soon be erected.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION.

Pancreatic Calculus removed by Operation.—Multiple Growths of the Great Gut.—Hydrocephalus Internus; Rupture into the Subdural Space; Intracranial Tension and its Temporary Relief.—Multiple Fibromata of the Tunica Vaginalis.

A MEETING of this section was held on March 12th, Mr. CLINTON T. DENT, the President, being in the chair.

Mr. JOHN MURRAY read a paper on a case of Pancreatic Calculus, in which the stone had been removed by operation. The patient was a female, aged 40, who had suffered from attacks of pain in the epigastrium since 1888. The attacks came on immediately after food and usually lasted about two hours. There was no vomiting at first. These symptoms continued for seven or eight years, when the attacks became less frequent, and for a period of two years she was free from pain. Ten years ago she had a severe attack which lasted 18 hours and was followed by jaundice. In 1905 she suffered from occasional slight colic. In 1906 an attack was accompanied by vomiting, epigastric tenderness, and cardiac irregularity. On July 23rd, 1910, she had severe pain and frequent vomiting, and on the following day became jaundiced. The jaundice continued until the middle of September, when the gall-bladder could be distinctly felt to be enlarged. On Sept. 24th the abdomen was opened through the right rectus muscle. The gall-bladder was aspirated and several ounces of bile withdrawn. There were no stones in the gall-bladder, but a stone could be felt apparently lodged in the common bile-duct. It was found to be necessary to enlarge the incision in the abdominal wall, and after this had been done a prolonged and careful search failed to discover the position of the stone. The abdominal wound was therefore sutured, a drain-tube being placed in the gall-bladder. The wound healed, and the patient returned home, but on the same day she was seized with pain and vomiting, and soon became jaundiced, the attack lasting 22 hours. The gall-bladder became distended, and subsequently the scar broke down and a large quantity of bile escaped. On Nov. 7th the abdomen was reopened, when the stone was at once found occupying its original position, lying behind the second part of the duodenum. The peritoneum was divided on the outer side of the duodenum, which was then displaced towards the left side, and after tearing through some pancreatic tissue the pancreatic duct was exposed. This was incised and the stone extracted. The duct was sutured and the abdominal wound closed, two drainage-tubes being introduced, one into the gall-bladder and the other towards the outer edge of the duodenum. The patient made an uninterrupted recovery, and had had no further trouble.—The paper was discussed by Dr. P. J. CAMMIDGE and Mr. H. BETHAM ROBINSON.

Mr. G. H. MAKINS, Mr. CUTHBERT S. WALLACE, and Mr. PERCY W. G. SARGENT communicated a paper on Multiple Growths of the Great Gut. The authors thought that as the following cases had occurred in their practice in a comparatively short time it was probable that they were more frequent than the text-books would lead one to suspect. They seemed to offer some food for reflection, both from a clinical and pathological point of view. 1. Male, aged 39. Two ring carcinomata, separated by an interval of about 6 inches, were present in the parts removed from the transverse colon in 1905. A second ring carcinoma was removed from the junction of the iliac and pelvic colons in 1908. It was probably present in 1905. In May, 1911, an ulcerating ring carcinoma was removed from the transverse colon immediately above the scar of the first resection. No other growths could be felt anywhere in the abdomen; no enlarged glands could be detected; the liver was not enlarged, and the whole of its accessible surface felt uniformly smooth. 2. Female, aged 53. A ring carcinoma occurred at the middle of the sigmoid loop, and another ring carcinoma in the rectum at the level of the os uteri. The bowel was hypertrophied above the highest growth and between the two. The upper growth was microscopically a columnar carcinoma. 3. Male, aged 56. The whole large intestine was beset with polypi. There were also an ulcerating ring carcinoma 12 inches from the cæcum and a second similar carcinoma 8 inches below the first. 4. Female, aged 43. There were two growths—a contracting ring carcinoma of the splenic flexure and an ulcerating carcinoma within 4 inches of the anus. A non-ulcerative polypoid condition of the mucosa extended from the upper growth to the anus. The muscle coat of the bowel was hypertrophied above the splenic growth, but not to any appreciable extent below it. 5. Female, aged 66. There were a ring carcinoma of the ascending colon with secondary glands and many polypoid growths on the distal side of the carcinoma. No microscopic examination was made. 6. Male, aged 32. A ring carcinoma occurred at the junction of the pelvic and iliac colons. Many minute polypi were found above the growth (extent upwards unknown), and multiple masses of simple polypi and carcinomatous ulcers below it. The annular growth was a columnar carcinoma, whilst one of the polypoid masses was a simple adenoma. 7. Female, aged 34. A ring carcinoma at the beginning of the ascending colon was accompanied by infected glands. From this growth down to the hepatic flexure polypi occurred scattered over the mucous membrane at gradually increasing intervals. The ring carcinoma and the polypi were shown to be columnar-celled carcinomata. 8. Female, aged 51. A ring carcinoma of the splenic and of the transverse colon was present. Immediately proximal to it was a pedunculated adenoma, which had been impacted in the ring growth. Microscopically the ring growth was a carcinoma, the pedunculated tumour an adenoma. The cases seemed to fall into four classes. 1. Ring carcinomata with a length of normal bowel between them (Cases 1 and 2). 2. Ring carcinomata having the mucous membrane between them covered with simple polypi (Cases 3 and 4). 3. Ring carcinoma having the mucous membrane distal to it covered with (1) simple polypi (Case 5); (2) simple and malignant polypi (Case 6); (3) malignant polypi (Case 7); and (4) ring carcinoma having a simple polypus immediately proximal to it. It was a question as to what relation these various growths bore to one another. If one was secondary to the other, what was the method of dissemination? Lymphatic infection, permeation, and peritoneal dissemination seemed to be excluded. The lower growths would then be either primary tumours or infection tumours. The cases in which the mucous membrane below the growths was the seat of polypi suggested that the ring carcinomata might have produced some exudate which irritated the mucous membrane to produce benign growths which in their turn became malignant. It would of course be possible to suggest that the polypi were first formed and later underwent a malignant transformation into ring carcinomata and malignant polypi. Clinically the multiplicity and chronicity of the growths was the striking feature.—The paper was discussed by Mr. C. GORDON WATSON, Mr. BETHAM ROBINSON, and Mr. CHARTERS J. SYMONDS.

Mr. W. G. SPENCER read a paper entitled "Hydrocephalus Internus; Rupture into the Subdural Space; Intracranial Tension and its Temporary Relief." It was based on the following case. A boy, aged 5 weeks, was admitted, apparently suffering from hydrocephalus internus, who exhibited marked intracranial tension, rigidity, frequent vomiting, and screaming fits. With the object of making a communication between the cerebral ventricles and the subdural space the skull was trephined, when all the fluid was found in the subdural space. In order to afford an escape for the fluid several attempts were made to drain it into the subcutaneous tissue. Finally, a communication with the nose through the ethmoid plate was set up in order to produce the condition causing cerebro-spinal rhinorrhœa, such as has followed accidents, &c. This gave relief from tension until the child's death some time later, when it was found that the cerebral ventricles had ruptured into the subdural space, so that the membranous sac representing the cortex had quite collapsed. Finally, a comparison was made between the results obtained by Goltz from removing the cortex of the cerebral hemispheres in dogs and that which could be observed in the child.

Mr. MAKINS read a short paper on a case of Multiple Fibromata of the Tunica Vaginalis. The patient, a man aged 27, had noticed some nodules at the back of the right testis as long as he could remember. These had given rise to no inconvenience, but of late they had been increasing in size

and number. Examination revealed a group of nodules like a bunch of grapes in the back part of the scrotum. The skin was free, but the nodules were attached to the back of the testis. With this exception the testicular outline was perfect and the organ apparently normal in size and consistence. The growths were removed. They were situated beneath the serous layer of the tunica vaginalis, a large group over the centre of the epididymis and two small nodules on the outer surface of the body of the testis. No definite connexion existed between the separate nodules, and the whole were readily removed by dissecting away the tunica vaginalis. Only one similar case appeared to have been recorded, that by Tikhanovitch, quoted by Balloch in the *Annals of Surgery*, vol. I., 1904, p. 396. All other recorded instances had been of large soft fibromata showing often a tendency to central necrosis. Removal was indicated, since the tumours generally had shown a tendency to enlarge indefinitely and to necrose. In the case recorded the peculiarity consisted in the arrangement in multiple discrete nodules, and the hard character of the fibrous tissue forming the tumour. In nature the nodules were probably identical with the small fibromata occasionally met with in the subserous layer of the parietal and visceral peritoneum.

SECTION OF ANÆSTHETICS.

Ether and Hedonal Infusion Anæsthesia.

A meeting of this section was held at 15, Cavendish-square on March 1st, Dr. W. J. MCCARDIE, the President, being in the chair.

Dr. F. S. ROOD read a paper on Ether Infusion Anæsthesia. After quoting the results and describing the methods of ether infusion anæsthesia in various continental clinics, he proceeded to describe his modification of the apparatus. He commenced at first to employ a solution of 10 per cent. ether in normal saline solution, but finding that there was some hæmolysis as a result he next employed a 5 per cent. solution. Finding that the induction of anæsthesia was apt to be longer than convenient, and that the quantity of fluid injected was open to the objection of being unnecessarily large, he next used a 7·5 per cent. solution. This gave perfect results. There was no hæmolysis and the induction period was now reduced to a few minutes. The patient was given a hypodermic injection of morphia 1/6th gr., scopolamine 1/100th gr., and atropine 1/100th gr., about three-quarters of an hour before operation. The median cephalic or median basilic vein in the arm was exposed under local anæsthesia (produced with β-eucaine solution) and the cannula tied in. It was found that it was an advantage to close the wound so produced at once, leaving one stitch untied until the end of the operative procedure of the surgeon. Of course, any vein—e.g., the saphenous in the leg—could be used. The solution was warmed by being passed through a specially devised warming chamber before being allowed to enter the vein. At first the fluid was run in with the tap turned full on, and anæsthesia should be induced by running in from half to one pint of the 7·5 per cent. ether saline solution in from three to five minutes. After the induction of anæsthesia the tap which regulated the flow was so turned that a succession of drops was run into the vein practically continuously. This obviated any possibility of clotting and reduced the quantity of fluid injected to the minimum necessary to maintain anæsthesia. Respiration should be carefully watched and depth of anæsthesia carefully regulated by increasing or decreasing the rate of flow. Anæsthesia was so quickly lightened or deepened that the anæsthetist needed to pay great attention to the rate of flow employed. He had now employed this method in 136 cases and had practically no bad after-results; 6 patients only vomited, 3 of whom had swallowed blood.

Mr. C. M. PAGE next read a paper on Hedonal Infusion Anæsthesia. The method had been first introduced in 1910 by Federoff, of St. Petersburg. He reported 530 cases from several Russian clinics; in no instance was death attributable to the anæsthetic. The method adopted was one of *interrupted* infusion. Mr. Page reported on 75 cases in which he had used hedonal at St. Thomas's Hospital. The drug was infused *continuously* from a special tank and a 0·75 per cent. solution of hedonal in normal saline solution was employed. In all instances good anæsthesia was obtained. The largest amount of solution infused in any one case was 2000 c.c., the smallest was 40 c.c. The anæsthesia obtained was steady and associated with great muscular relaxation. The patient usually remained sleeping for from six to eight hours after the operation was finished. The only danger likely to arise during the anæsthesia was cyanosis, either from obstruction to the air passages or from a too rapid dosage. The solution should be allowed to run in at the commencement at a rate of 50 to 100 c.c. per minute.—Mr. L. E. BARRINGTON-WARD reported the first case of death during hedonal anæsthesia in this country. The patient was a girl aged 8, of fair size and development, and so far as could be determined quite normal, except for tuberculous glands in the neck and enlarged tonsils. The method used was that described by Mr. Page, to whom he was indebted for letting him see some cases of hedonal infusion anæsthesia. The injection was normal, the left saphenous vein being selected. The operation was started 10 minutes after the commencement of anæsthetisation, and at that time 300 c.c. of a 0·75 per cent. hedonal solution had been used. The child was of a good colour and not at all deeply under. After another 20 minutes the skin stitches were being put in when without any warning the patient stopped breathing. The colour remained good and there was no respiratory obstruction whatever. Efforts at resuscitation were made by artificial respiration, bleeding, injection of strychnine, atropine and ether, and massage of the heart through the abdomen, but, unfortunately, without success, though they were persisted in for 1½ hours. During the actual period of operative procedure another 200 c.c. of the 0·75 per cent. hedonal solution had been used, making a total of 500 c.c. used from the commencement of the administration until the respirations failed. Post mortem there was an enlargement of lymphoid tissue generally all over the body. The thymus was distinctly enlarged, and it enwrapped the great vessels at the base of the heart in a curious manner. The Malpighian corpuscles were especially prominent, the glands in the abdomen were hypertrophied, and there was a mass of lymphoid tissue about the ileum and cæcum. The tonsils were enlarged and there was a greatly hypertrophied ring of lymphoid tissue around the tonsil, tongue, and pharynx. The heart was not abnormal in colour, but it was dilated, and on subsequent microscopical examination exhibited fatty degeneration. The bases of the lungs were œdematous, and there was an excess of free fluid in the pericardium. Dr. B. H. Spilsbury, who performed the post-mortem examination at the request of the coroner, considered the case to be one of status lymphaticus. The dose in this case was not excessive for the age and weight of the patient. Mr. Barrington-Ward said that he did not propose to say more about the hedonal infusion method as his experience amounted to 20 to 30 cases at the Children's Hospital, Great Ormond-street, and that was too few to dogmatise from. He had had no trouble or anxiety in any of the other cases in which he had employed the method. He would be glad to answer any questions.—The PRESIDENT said the section was fortunate in having so much recent good work brought before it at one sitting, and both Dr. Rood and Mr. Page could be congratulated on the number of their cases, their results, and the improvement in technique they had effected. They were also indebted to Mr. Barrington-Ward for the clear account he had given of a fatal case under hedonal. He only wished equally good reports of all fatalities during anæsthesia were furnished, then more would be learned about the causes of such fatalities.—In the subsequent discussion Mr. G. A. BARTON said he was glad to see that infusion anæsthesia had been given a trial in this country. Two years ago he had expressed the hope that it would be. However, he did not think the method offered, in ordinary cases, better results than did scopolamine, morphia, and open ether. He thought all the advantages claimed by Dr. Rood for the infusion method were obtainable by inhalation. There were, of course, occasions when infusions would be useful. He thought the present apparatus should be simplified. Possibly some apparatus like that invented by Dr. Maguire for his formalin injections would be possible.—Dr. HAROLD LOW discussed the question of safety and the advantages and disadvantages of the infusion method, more especially with reference to hedonal. The anæsthesia obtained under hedonal was perfect. It was easily induced and maintained, respiration undisturbed, muscles completely relaxed, no after vomiting; the patient slept after operation during the time that pain was most likely to be felt. He did not think that either of

the methods discussed that night would take a place as the routine method, but they would rather take their special place for suitable cases.—Dr. J. F. W. SILK pointed out the not uncommon difficulty in finding the vein, on the importance of the anæsthetist being at the head of the patient, and on the danger of a possible clot being washed into the circulation. He thought the method would find its level, more especially for cases that needed transfusing for possibly-shock-producing operative procedures.—Mrs. DICKINSON BERRY asked Mr. Page what he considered were the advantages of hedonal over ether infusion as a method of anæsthesia.—Dr. J. BLUMFELD dwelt on the length of time the induction of anæsthesia took in ether-infusion when 5 per cent. solution was used, and advocated a stronger solution.—The PRESIDENT thought that in these new methods anæsthetists possessed an addition to their armamentarium which might be useful in selected cases for operations on the upper part of the body, just as spinal anæsthesia was especially applicable in certain cases in the lower half of the body.—In his reply, Dr. ROOD dwelt on the absence of after-sickness and bronchitis. He emphasised the necessity for strict asepsis. The largest amount of fluid he had ever had to use was between 4 and 5 pints. With regard to the rate of injection, he turned the tap full on at first. From 12 to 18 ounces would be necessary for a healthy adult male, and the period of induction averaged four minutes. For weakly people half that quantity would be necessary.—Mr. PAGE, replying, thought that there were less cyanosis and congestion in the air-passages with hedonal than with inhalational anæsthesia. With regard to the advantages of hedonal over ether infusion, he thought the apparatus was simpler; being composed of metal it was unbreakable and more capable of sterilisation. The solution could be boiled and remained stable. This latter advantage enabled the anæsthetist to run in his solution at a higher temperature than was possible with the ether method. Hedonal was said to be less irritating to the tissues than ether, and as it was excreted by the kidneys there was no irritation of the lungs. Being but slowly excreted less fluid had to be injected to maintain anæsthesia.

OTOLOGICAL SECTION.

The Value and Significance of Hearing Tests.

A MEETING of this section took place on March 15th at Chandos-street, Cavendish-square, Dr. W. MILLIGAN, the President, being in the chair.

A discussion on the Value and Significance of Hearing Tests was introduced by Dr. THOMAS BARR (Glasgow) and Mr. SYDNEY R. SCOTT (London).

Dr. THOMAS BARR took up the nature of bone conduction of sound, the basis of the information derived from it in pathological conditions of the ear, and the difficulties, apparent contradictions, and possible fallacies of the various tests by bone conduction. Secondly, the present position of the various tests as to their value and significance.

Mr. SYDNEY SCOTT considered the mechanism of the sound stimulus in the cochlea in relation to tone range and tone acuity by air or other forms of conduction, and gave some results of concurrent clinical and pathological investigations.

The opening addresses were illustrated with lantern slides and some instruments which are not in general use.

It was decided to defer the discussion until May 17th.

CHELSEA CLINICAL SOCIETY.

Disorders of the Circulatory System.

THE annual clinical debate of this society was commenced on March 12th at St. George's Hospital, Dr. JAMES A. MANSELL MOULLIN, the President, being in the chair.

The debate was inaugurated by Professor Sir T. CLIFFORD ALLBUTT with a paper entitled "The Physician and the Pathologist on Heart Failure." He began by pointing out the inexactitude of our present state of knowledge of heart failure and of the conditions which produce it. Clinical physicians will give a ready answer to the question of what cardiac failure is, but they can often neither foretell it nor prevent it. The pathologists are no less ready to explain fatty degeneration, various kinds of myocarditis, degenerations of the *a.-v.* bundle, and other lesions. But the correlation of the two aspects, clinical and pathological, is still often lacking. The physician and the pathologist are plotting, each upon his own side of the hedge, and for lack of mutual coöperation the paths of both remain full of complications. There is, for instance, no definite criterion whereby to distinguish inflammation of the myocardium, in a fever case say, from dilatation due to mere lack of muscular tone. From these introductory remarks the audience would infer that Professor Allbutt intended to say little about valvular diseases of the heart, for there the lesions are partly mechanical and can be estimated, nor does death, as a rule, occur suddenly. Dilatation and hypertrophy were also passed over with a brief reference to the fact that there is no constant relation between them; dilatation, it was emphasised, is no gauge of the histological condition of the myocardium. If delineation of the heart's dimensions gives little trustworthy information as to the condition of the myocardium, what of the indications afforded by auscultation? Even they are uncertain; a slapping first sound may mean much or little; defective impulse beat and feebleness of the second sounds are only too often equally misleading. These physical signs are equivocal; they are not criteria. Again, vertiginous phenomena often accompany cardiac disease; but they are so often due to other causes that, taken alone, they, too, are often equivocal symptoms. The pulse, too, as experience has shown, is often deceptive; even the rhythm of the pulse has ceased to be accepted as a guide to myocardial damage. There are, however, two pulse signs that are significant. One is persistent alteration of rate and the other is pulsus alternans. As to the latter, we must remember Dr. James Mackenzie's warning that it may appear in a tracing when it cannot be detected by the fingers. A permanent change of rate, whether bradycardia or tachycardia, is of much importance. Let a pulse-rate be normally 65 to 70 when the patient is at rest; let it be found later to have become permanently 75 to 85 under similar conditions. Then the inference is that there is some profound change in the wall of the heart; yet even this is not an absolute criterion. Of dyspnœa, slight œdema and cyanosis, pulmonary crepitations, and many other similar signs, there is no need to speak, for they usually signify late stages of the malady and speak only too plainly for themselves. On fatty degeneration pathological opinion has undergone of late wide fluctuations, but the distinction between this and fatty infiltration still holds its ground, although the two merge one into the other. In the midst of fatty deposits the cardiac fibres may be well striated, and Aschoff even holds that fatty infiltration may be a sign of healthy activity. At any rate, it is possible for no clinical symptoms to be caused by advanced states of fatty change. In so-called chronic myocarditis we may find no greater correlation between the clinical symptoms and the pathological appearances. Fibrosis of the myocardium, again, is not infrequently found in hearts which have been quite efficient during life, and Dr. Hale White has lately described this condition as practically undetectable. Syphilitic fibrosis is, of course, another matter. The site of the lesions does not give very much help, and there may be complete destruction of both limbs of the *a.-v.* bundle without any clinical signs of dissociation. There are probably many subtle agencies of which we have no idea capable of determining the delicate poises of life and death. There is a world of surface tensions, viscosities, and other physical phenomena of which we know little; and there is a world of chemical reactions and ionic effects of which we know almost nothing. When we speak further of toxic influences we realise how near the precipice the heart may be. The riddle I have done so little to solve is that of sudden death in the man who has had no symptoms of illness and does not suspect that he is ill.

Sir LAUDER BRUNTON remarked that a good deal could be said for the cause of sudden death once assigned—namely, shortness of breath—as contrasted with cardiac failure. According to Casper, 50 per cent. of drowned people did not die from suffocation but from shock, both cavities of the heart being found completely empty. On the other hand, he had seen a case of aortic regurgitation within two minutes after death, and the appearance was typically that of strangulation, the face being deeply congested and the jugulars distended. In a case of sudden death from angina pectoris he had kept the heart going for nearly an hour by artificial respiration, although he had been unable to recover the

patient. In cases of sudden death from shock or from poisoning by hydrocyanic acid, digitalis, or diphtheria antitoxin no anatomical lesion whatever could be found in the heart, although no doubt chemical changes occurred in its tissues. He agreed that no single symptom was pathognomonic of fatty heart, but he thought that by taking several symptoms together a fairly correct diagnosis might be come to. He thought that a low blood pressure without any apparent cause in elderly people was to be regarded with suspicion. Death occurred in children from want of food, improper food, or imperfect assimilation. In adults these were the causes of death, but in addition there was over-work. This simile might help them in regard to the heart, which was in the unique position of having to supply itself with nutriment, with oxygen, and to remove its waste products. When the heart began to fail its own nutrition and its own oxidation were diminished and the functions of the kidney were also lessened. It had been shown that the heart was exceedingly sensitive to a lessened supply of oxygen, and if the respiration ceased long enough the heart was certain to stop. The respiration might cease because the heart had failed to send sufficient blood to the respiratory centres, and thus there was an intimate interaction between the heart and brain, as well as between the heart and kidneys. The accumulation of waste products might lessen the vitality of both heart and medulla, and diminish their power to utilise the oxygen which was supplied to them. Oxygen was a powerful stimulant to the heart. In a case of cardiac asthma he had seen the blood pressure in the brachial artery rise in ten minutes during the inhalation of oxygen from 75 millimetres to 150. The use of oxygen in a case of heart disease was sometimes very beneficial as a cardiac tonic. One required to be very careful in heart disease to avoid extra exertion. He thought by attention to the old-fashioned methods of securing elimination of waste products, and by the judicious use of appropriate diet and of cardiac remedies, the use of which was now so much better understood, a great deal might be done to prevent cardiac failure and sudden death.

Dr. SAMUEL WEST said that Sir Clifford Allbutt's destructive criticism showed them how little they knew. He himself was disposed to bring these cases of sudden cardiac failure into line with the toxic conditions spoken of by Sir Lauder Brunton. Intense poisons might be produced in conditions of which they knew but little, as in snake venom, or in uræmia and diabetes; and he could see no other supposition which accounted for some of these sudden deaths from cardiac failure. He was not prepared with any constructive theory; but it seemed to him that toxic influences formed the direction for future inquiry.

Dr. C. C. GIBBES related four unusual cases that had a bearing on the question of heart failure from myocardial degeneration. In the patients with scurvy there was pure fatty degeneration of the heart, the result of toxæmia, somewhat resembling that of phosphorus poisoning. In the case of old-standing aortic disease there was an acute toxæmia (from which the patient had apparently recovered), producing a myocardial intoxication sufficient to cause a sudden and unexpected arrest of the heart's action. The fourth case was that of a lady suffering from so-called fatty degeneration of the heart, although he believed the more correct classification would be fibro-fatty degeneration. The first indication of any heart disease was a sudden apoplectiform attack with complete unconsciousness for 36 hours; she had no paralysis, but was aphasic for two days after consciousness returned. She was then aged 67. During the following 18 months she had three other slighter attacks, but was then able to resume her ordinary mode of life for four years, when she began to have a series of syncopal attacks. During the following five years she had a great many attacks, and on several occasions it seemed as though she would never rally. However, these ultimately ceased and nothing fresh supervened until four years later, when she began to have epileptiform attacks after any fatigue. The worst came on during a train journey to Plymouth two years before she died. No symptoms presented themselves until after Exeter was passed, when she suddenly had an attack presenting all the symptoms of *petit mal*. She had eight attacks in all before the end of the journey. These attacks were obviously due to cerebral anæmia from heart failure, for they passed off at once when her head was in a dependent position. After this journey she was prevented from over-exerting herself and she had no more attacks. She died at the age of 84 from senile decay, without any signs of heart failure whatever. This case seemed to answer the question, Can the heart muscle of old age make any recovery from fatty degeneration? He said that, broadly speaking, fatty degeneration of the heart arose from some defect in the quantity or quality of its blood-supply. When cardiac failure resulted from the former they could do nothing, but when it was due to a defect in the quality of the blood recovery was possible, provided they could remove the cause. It could not be denied that the severest cases of scurvy (where both the voluntary and involuntary muscles were in a state of fatty degeneration) recovered, and the patient resumed active service. The same might be said of enteric fever. In the last case there was a peculiar sequence of attacks resulting from cerebral anæmia, secondary to heart failure, yet the patient died at the age of 84 from senile decay without showing any symptoms of heart failure. He suggested that more knowledge was required of acute myocardial intoxications and their effects, because in his belief such intoxications might and did occur unrecognised, the patient recovering without any permanent injury to the heart.

Dr. WILLIAM EWART referred to the variety and the importance of the "unknowable" or at any rate unknown quantities in the problem. The pathological degenerations and the toxæmia offered unlimited scope for speculation. The versatility of their theories was illustrated by the recent prevalence of the diagnosis of "myocarditis" which had now been supplanted by that of "heart-block." He drew attention to mechanical risks which were both demonstrable and manifestly disturbing to cardiac rhythm, and in particular to the gastro-intestinal distensions which also interfered with the paired mechanisms of respiration, and carried with them toxæmic and nervous reflex possibilities of evil. Gastric distension was often undetected through their forgetting that the crura of the diaphragm fixed the fundus to the spine, thus tending to guide its inflations into the left thoracic groove, behind the heart, at the expense of the more squeezable lung; and through their never looking for it in the back where it was to be found. This practical point he had often insisted upon, but it was first published in 1899 in a preliminary note, and in the Transactions of the Clinical Society of London, Vol. XXXIII., p. 202, "On Gastric Distension Upwards and Backwards." Clinical experience of its frequency and of its relief as a cause of urgent respiratory and cardiac symptoms had impressed upon him that, although it was only one of many, it was not the least frequent or the least potent of factors in the etiology of unexplained cardiac failure.

Dr. HECTOR MACKENZIE referred to various types of heart failure which were met with in practice. There were, first, the cases where the existence of heart disease had previously been unsuspected. The heart that failed had sometimes been passed as sound in a searching examination for life insurance only a short time before. Death occurred during sleep or perhaps with dramatic suddenness during the day. In these cases structural changes of the heart were usually present, such as fatty degeneration, fibroid disease, sclerosis of the coronary arteries. The clinical recognition of these structural changes in the absence of symptoms and physical signs was impossible. The immediate cause of death in these cases was obscure. Some seemed to be associated with dilatation of the stomach, and the fatal termination had followed a heavy meal and indigestible food. Of the younger cases some were probably examples of the condition known as status lymphaticus. Secondly, there were the cases of heart failure in which there had been for a shorter or longer period symptoms of functional disturbance, irregularity, rapidity, intermittence, anginal attacks, or dyspnœa, but there were no obvious signs of valvular lesion. In this group were included the heart after fevers, the influenzal heart, the heart after diphtheria, the heart in Graves's disease, the smoker's heart, and so on. Changes in the myocardium were generally found post mortem and were the effects of poisons acting on the heart muscle. Here symptoms and physical signs should lead to the recognition of myocardial disease and the adoption of the proper treatment which might tide the heart over the period of danger. Thirdly, there were the cases where there was old-standing valvular disease or adherent pericardium. There was a striking difference in the way in which failure came about in the mitral and in the aortic cases. In the case of the mitral lesions, the heart usually failed slowly, while in

the case of aortic incompetence sudden failure was not uncommon. Various explanations had been given of this difference, but one important contributing factor was the more usual presence in aortic cases of degenerative changes in the aortic and the coronary arteries, as well as in the myocardium. Rheumatic affections of the aortic valve were, on the whole, less dangerous than those which came on in middle life in association with atheroma of the aorta. If the heart muscle recovered its tone valvular lesions might be adequately compensated for and life might be prolonged to old age. The problem of heart failure was, as Sir Clifford Allbutt had pointed out, very complex, and it was quite as difficult to explain why in some cases heart failure was averted as why in other cases it came about. It was wonderful how good the recovery of a heart badly damaged in childhood might be, and how, by means of compensation, it might maintain its vigour throughout a long and active life. Even when compensation seemed to have hopelessly broken down and there was general dropsy with waterlogging of the tissues, orthopnœa, and rapidity and irregularity of the heart so that the end in failure seemed inevitable, the heart sometimes proved itself capable of recovering, the signs of impending failure disappeared, and compensation was again restored.

The debate was then adjourned.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Discussion on the Treatment of Simple Fractures.

A MEETING of this society was held on Feb. 28th, Mr. J. M. COTTERILL, the President, being in the chair.

Mr. CHARLES W. CATHCART opened a discussion on the Treatment of Simple Fractures. He said that in later years a stimulus to the search for improved methods of treatment had been supplied by the Workmen's Compensation Act. The economics of the question, also, must attract attention, for every man unfitted for his work by a broken bone was a loss to the State. Within recent years the revival of massage, and its remarkable success in the treatment of sprains and bruises, the revelations of the X rays, and the antiseptic method itself, which allowed of the direct inspection of the broken bone, had called attention to the healing of fractures. For the treatment of a recent case of simple fracture there were three methods available: the old immobilisation method, the massage and early movement method of Lucas-Championnière, and the immediate operation method of Arbuthnot Lane. 1. The immobilisation method consisted in setting the fracture and fixing firmly not only the seat of fracture but also the joints above and below it until the bone was united, a period varying from six to eight weeks. The guiding theory that union could not take place if there was the slightest movement at the seat of fracture was now known to be erroneous, for broken ribs healed readily in spite of respiration, and the success of the massage and early movement had removed any lingering doubts. Rigid fixation impeded circulation and delayed the union of the bones, while it permitted the formation of adhesions. 2. The massage and early movement method of Lucas-Championnière. Here splints were used only to a limited extent to prevent displacement. Massage was used as soon as possible after the fracture and continued daily at first and afterwards at longer intervals. Movements of the adjacent joints, both active and passive, were cautiously employed. The theoretical bases were that rapid healing of the broken bone was promoted by the free circulation thus induced, while adhesions were prevented and the nutrition of the muscles maintained. Exact apposition of the ends of the bone was considered of less importance for future usefulness of the limb than free use of the joints and muscles. The objections were the greater time and attention required, and that it did not give good results in certain cases. 3. The immediate operation method, recommended especially in fractures of the long bones of the lower limb. The ends of the bone were exposed, the blood clot removed, and the broken fragments adjusted and held in exact position by steel plates fixed into the bone with screw nails. The theory was that restoration of function, especially in the lower limbs, demanded mechanical restitution of the shape of the bone, without which union was delayed, and pain when the limb was used by the altered strains in the bone. No account was taken of the additional laceration of the soft parts involved by the operation or of the delay in obtaining functional restoration owing to disuse of the muscles and joints during the healing of the wound. But the operation required much surgical skill and thoroughly reliable technique. He submitted that (1) it was not necessary to secure the joints above and below the seat of fracture more than was necessary for the patient's comfort and the limb might be massaged and the joints moved as required. This modified method gave good functional results in most fractures of the shafts in children as well as in adults (femur excepted) where there was no great displacement of the fragments nor severe laceration of the soft parts. 2. Massage and early movement gave more rapid results than the preceding method, although the final results might not be much better. This was the method of choice for fractures near or involving joints, and in fractures of shafts with much laceration of soft parts and irregularity at the seat of fracture, as long as there was not much angular or axial deformity or necessity for complete restoration of length of limb. 3. Immediate operation where reliable technique was available was the method of choice in transverse fracture of the patella in healthy adults, in joint fractures where the fragments mechanically hindered movement, where important muscular attachments were torn off and could not be approximated; where a nerve was involved; where soft parts prevented the fragments from coming into contact, or where angular or axial deformity could not be restored by manipulation or posture, especially in the lower limb; or again where the patient's occupation necessitated walking without a limp as in the army or police force. As to individual fractures: 1. In Colles's fracture reduction was advisable not only to prevent deformity but to re-establish range of movement of the wrist. The fragments should be brought into apposition under a general anæsthetic, and a splint provided for the anterior aspect. Warm fomentations and gentle massage gave relief. Massage was repeated daily. In correct massage muscles were soothed, swelling was rapidly reduced, and no pain caused. Passive movements were confined at first to the fingers and carried to the wrist as pain subsided. Active movements of the fingers began about the third day; the splint was discarded in from 10 to 14 days and the hand removed from the sling in about three weeks. Adhesions were seldom apparent when the massage and movement treatment was properly carried out. In this fracture operation was seldom called for, but immobilisation was likely to do much harm. 2. In Pott's fracture, while massage and movement was the method to be employed, operation might occasionally be called for. Prolonged fixation was likely to lead to stiffness of the ankle. 3. In fracture of the shaft of the femur in children Mr. Cathcart did not remember any case which did not mend with perfect recovery of function. He preferred treatment by extension and local splints after reduction under chloroform, combined with massage and early movement. He was satisfied that operation and plating for a simple fracture of the shaft of the femur in a child were quite unnecessary. In adults, however, surrounding muscles were massive and powerful, and swelled rapidly, so that no one could determine the form of the fracture or accurately adjust the ends even under the deepest anæsthesia. Consequently, he believed that the accuracy of alignment in different cases depended not on the surgeon's skill but on the nature of the fracture. In transverse fracture the broken ends would over-ride, separated by the thickness of the shaft. In oblique fracture the ends, though over-riding, would be more nearly in line. For his own part, in fracture of the shaft of the femur in adults he was not prepared to give up the massage and movement treatment in favour of operation, though he was willing to admit that the operative results might be better.

Professor ALEXIS THOMSON said he was a follower of Lucas-Championnière. If there was pronounced shortening beyond what might be overcome by extension with weights, he advised the use of Steinmann's apparatus—a pin inserted into the lower end of the femur, whereby extension equal to 40–50 lb. was obtained. To correct eversion, the long splint was very useful, as were also sandbags. Among his recent cases he found one case of fracture of the thigh up and walking about in six weeks; an old woman over 80 who could walk well in six weeks; and a man with fracture of the neck of

the femur, who was up on the twenty-first day and out on the twenty-eighth.

Mr. DAVID WALLACE thought it one's duty in every case of fracture to use the X-rays not only to determine the displacement, but after the fracture had been set to determine if it had been properly done. Mr. Wallace used practically no splints in his wards. In Pott's fracture he kept the leg at rest, but did not use sandbags; in Colles's fracture he put the arm in a sling and encouraged the patient to make movements. In fracture of the femur good alignment was most necessary. If it could not be got without operation he would operate. He thought it more difficult to get a good result without shortening in the clavicle than in any other bone.

Mr. A. A. SCOT SKIRVING said that he operated more frequently now than formerly, but never on any fracture where there was no displacement. In Pott's fracture he thought there was a great tendency to displacement; it had to be carefully watched, the great risk being the development of traumatic flat-foot.

Mr. HENRY WADE narrated the procedure in the out-patient department of the Royal Infirmary, where massage and movement had been carried out for several years past. Quite exceptionally splints were used. Massage and passive movements were carried out from the first, and, even in the most severe cases, active treatment within the first week. In a number of cases the patient's wife was the masseuse, and they had been able to instruct her in a very short time.

Mr. E. W. SCOTT CARMICHAEL said that splints in the treatment of fractures should be looked upon as a rare accessory. Massage and movement required more supervision and care on the part of the surgeon and medical man than they usually got. Striking differences in results were seen according to the intelligence and skill of the masseur.

Mr. J. W. DOWDEN said that in treating a case in private he employed adhesive plaster, placed the arm in a sling, encouraged the patient to make active, not passive, movements, and he himself massaged the part. He had done away with splints and bandages, but unfortunately there was still shortening which had to be corrected by extension. In cases of fracture of the elbow if one began with a little passive movement, in the course of the next day the patient would be practically well.

Dr. H. G. LANGWILL, in reference to compensation, said that the point of importance to his mind was not merely the union and fair restoration of movement, but the patient's ability to earn his livelihood. A great many of the old fractures would be found going about unable for work three or four months after leaving hospital but drawing compensation.

Dr. A. PIRIE WATSON said that in fractures of the upper extremity he did not consider the splint important, but he emphasised the point that massage and movement could not be begun too early. Massage should precede reduction; it was useful for overcoming spasm in the muscles. If it took more time at first, it saved time and vexation later. The best masseur was the doctor himself; massage should never pain but always soothe.

Dr. JAMES RITCHIE said that his practice was after reduction to apply a light splint with an elastic bandage, because of the tremendous comfort it gave to the patient.

Mr. J. W. STRUTHERS said that after the patient reached a certain stage, what he needed was voluntary movement, and this could best be obtained by work. If it were possible to get light jobs for such patients they would become fit in a much shorter time.

The PRESIDENT cautioned against putting patients into the hands of enthusiastic and muscular masseurs, which harmed certain cases. The long splint was an abomination.

Mr. GEORGE L. CHIENE and Dr. JOHN ORR also spoke, and Mr. CATHCART, in replying, said that the difficulty in compensation cases was that a large number of such patients were quite satisfied if they were getting compensation and they did not wish to return to work.

NEW LONDON DERMATOLOGICAL SOCIETY.—At a meeting of this society, held on March 14th, Dr. P. S. Abraham, the President, being in the chair, Dr. Tom Robinson showed a woman, aged 51, the subject of Myxœdema, who also presented several brownish, verrucose nævi upon the neck and abdomen, which had only appeared during the last 18 months.—The President showed a case of Unilateral Facial Hyperidrosis in a young woman aged 24.—Dr. C. G. Mack showed a little girl with severe Melanodermia in whom constitutional symptoms indistinguishable from those of Addison's disease had been present.—Dr. David Walsh showed: 1. A girl with Scrofulodermia of the Neck. 2. A young man with a curious lesion upon the front of the thorax, somewhat infiltrated and depressed. Two years ago there had been a deeply excavated ulcer upon this area, and the question of malignancy was raised. 3. A young man with old Keratosis Pilaris that was now complicated by the presence of a circinate, erythematous eruption upon the trunk and limbs, resembling a syphilide.—Mr. D. Vinrace showed a little girl with Multiple Lupus.—Mr. H. C. Samuel exhibited a case of Cheiropompholyx in a young woman who had been subject to periodic attacks.—Dr. G. Norman Meachen showed a boy with Favus of the Scalp, whose father was born in Amsterdam, but the mother and the boy were Londoners. The father, a sister, and a brother were also affected.

HARVEIAN SOCIETY.—A meeting of this society was held on March 14th, Dr. H. J. Macevoy, the President, being in the chair.—Dr. R. H. Cole read a paper on Hypochondriasis, its Significance and Treatment. He defined the condition as a subjective state of ill-health which was more or less chronic, and was out of all proportion to any disorder of the bodily mechanism. The hypochondriac was one who was painfully conscious of his organic sensations and which dominated his personality to the detriment of impressions from without. He stated that the conducting medium of the sympathetic system had not been found to be defective, and questioned whether the condition was the result of toxins or was due to an anomalous constitution of cortical neurons—possibly those connected with the visceral representation in the Rolandic area of the brain. Referring to the milder cases, for which little could be done except that they should be induced to follow their usual avocations, he based his communication on a scrutiny of 50 of the graver cases that had been under his close observation. Most of these cases required certification, owing to disorder of conduct dependent on illusions and delusions. These cases all belonged to one of the two classes of hypochondriacal melancholia or hypochondriacal paranoia, and were not associated with any obvious bodily disorder. They were further clinically considered in four groups according as the symptoms were general, or were associated with the alimentary tract, the sexual organs, or the brain. The suicidal element was discussed as especially marked in the sexual cases. Whilst the paranoiacs were regarded as inevitably chronic, the proportion of recoveries from hypochondriacal melancholia was relatively smaller than in other forms of melancholia. Some might be considered as having attacks of melancholia superimposed on a paranoiac basis. Differentiation was made between these cases and hypochondriacs that were general paralytics, cases of dementia præcox, epileptics, alcoholics, and cases of senile involution. As to treatment, although the milder paranoiacs derived benefit from change of surroundings the melancholics required rest and quietude. Freud's method of psycho-analysis was referred to in tracing the origin of delusions. Forcible feeding was resorted to in all cases of refusal of food, and a *résumé* was given of the medicinal and other modes of treatment adopted.—The paper was discussed by Dr. E. D. Macnamara, Dr. Maurice F. Squire, and Mr. Campbell Williams.—Dr. Cole replied.—Mr. V. Z. Cope read a paper on Latent Surgical Disease, by which title he indicated those pathological processes amenable to surgical treatment which might advance to a serious stage while yet giving no appreciable symptoms of their presence. He remarked that disease was manifested by derangement of function, alteration in physical characteristics, or simply pain. Function varied normally within such great limits that early changes due to disease were easily missed. Alterations in size and shape of internal organs were not detected early unless important structures were impressed upon; pain was an inconstant symptom, inasmuch as viscera supplied by the sympathetic system were not sensitive to ordinary stimuli. Latency was a feature of acute disease both at its inception and again after the acute stage; the early symptoms of an acute appendicitis might correspond to an advanced pathological progress, and the condition sometimes appeared quiescent even when an abscess had formed. Chronic infections of mucous

VOLUME TIGHTLY BO

membranes which were furnished with diverticula and crypts frequently gave no symptoms except by occasional exacerbations which were mistaken for reinfection; nasal sinusitis and chronic gonorrhœa were cited as examples. The chronic granulomata and neoplasms were the common classes of disease which remained latent. Tuberculosis was especially prone to give no symptoms when it attacked the peritoneum or kidney. Syphilis was frequently latent for long periods; he mentioned a case of actinomycosis of the appendix which gave rise to no abdominal symptoms. Attention was called to the extraordinary latency of carcinoma of the colon and rectum and the need of early rectal and sigmoidoscopic examination emphasised. The late stage of carcinoma of the cervix at which symptoms sometimes first appear was also laid stress upon. Duodenal ulcer sometimes gave rise to no pain of any description; the first sign might be a severe hæmorrhage or general peritonitis. All the remarks made in the paper pointed to the important conclusion that early symptoms often meant late disease. The practical consequences of such conclusion were obvious.—The paper was discussed by Dr. W. Carmalt-Jones, Mr. Campbell Williams, and Dr. G. de B. Turtle.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on March 14th, Dr. W. B. Paterson being in the chair.—The following specimens were shown and described:—Mr. C. A. Adair Dighton: 1. A Large Osteochondroma removed from the auricle under cocaine anæsthesia. It was of interest on account of its huge size and also because it was diagnosed, previous to removal, as epithelioma. 2. A specimen illustrating Intrinsic Epithelioma of the Larynx. This showed involvement of the ventricular bands, ventricles, true vocal cords, and arytenoid cartilages. It was removed by complete laryngectomy.—Mr. G. C. E. Simpson: Tuberculous Osteitis of the Ulna.—Mr. Simpson and Dr. D. Moore Alexander: (1) Papilloma of the Nose; and (2) Carcinoma of the Kidney.—Mr. R. W. Murray: (1) Sarcoma of the Scalp; and (2) Enterolith from the Mesocolon.—Mr. W. Thelwall Thomas and Mr. H. C. W. Nuttall: (1) Recurrent Sarcoma in the Stump; and (2) Lymphatic Nævus of the Skin.—Dr. T. R. Bradshaw and Dr. E. E. Glynn: Chronic Tuberculous Pericarditis.—Mr. R. A. Bickersteth: (1) Enormous Urethral Calculus; and (2) three specimens of an Unusual Breast Tumour.—Mr. Bickersteth read a note on three specimens of Unusual Breast Tumour. He considered them to be fibro-adenomatous in character. The cystic nature of some specimens was due to hæmorrhages which might cause a rapid increase in the size of the tumour. Mr. Bickersteth laid stress on the importance of macroscopic pathology as well as microscopic and referred to old writers who had described these tumours accurately.—Mr. F. T. Paul said the adenomatous tumours of the breast commenced in two ways; one as a peri-acinous growth and the other an intracystic vegetation. The former developed into the fibro- or myxo-adenomata, and the latter into the cyst-adenomata. Though the two when fully grown might show points of resemblance, they could always be distinguished from each other, and were really essentially different, more so even than acinous and duct cancer.—Dr. Glynn agreed with Mr. Paul in regard to the pathology of these tumours.—Dr. Glynn read a note on the Detection of Anthrax in Industrial Material. He pointed out that the disease appeared to be spreading among domestic animals, and consequently a larger number of agriculturists were becoming infected. It was difficult to demonstrate anthrax spores in industrial material; two methods were commonly used—viz., agar-plate cultures and inoculation of guinea-pigs. The latter method seemed the better, and by its means anthrax spores had been found in 21·3 per cent. of 41 samples of raw hides, wool, &c., examined.—Dr. W. Blair Bell read a note on the Estimation of the Calcium Metabolism, and gave a description of a new clinical method of estimating the amount excreted in the urine. The method consisted in centrifuging and measuring the amount of calcium oxalate, precipitated by oxalic acid, the phosphates being dissolved with acetic acid, in a calibrated tube. The estimation was made by comparing the amount precipitated from the urine with that obtained in a similar manner from an artificial standard urine containing a known quantity of calcium.—Sir James Barr said that the profession was very much indebted to Dr. Bell for the great amount of work which he had undertaken in order to determine a clinical method for accurately estimating the amount of lime in the urine. This apparatus, which he now showed, would fulfil all the necessities of clinical work in respect of estimating the lime salts in the urine. His own method for estimating the amount of lime in the urine was a very simple one. He took an ounce of urine, neutralised it with a little ammonia, then added concentrated solution of oxalic acid with 5 per cent. of strong acetic acid. This precipitated the lime as oxalate of calcium, and all the phosphates were dissolved by the acetic acid. With some experience the eye soon recognised what was normal and what was abnormal. He also showed that the excretion of lime by the kidneys was much greater than was usually supposed.—Dr. H. R. Hurter referred to the simplicity and ingenuity of Dr. Bell's method of estimation. He expressed surprise and satisfaction that the results obtained by it had been shown to coincide so closely with quantitative chemical estimations. He suggested the possible employment of a saturated solution of sodium sulphate as an alternative reagent for precipitating the lime salt.—The council of the Institution have appointed Mr. Paul, Dr. Glynn, Dr. R. J. M. Buchanan, and Dr. Bell to form a Pathological Reference Committee.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 6th, Mr. W. M. Willis being in the chair.—Mr. Willis showed a man whose thigh had been amputated for Diabetic Gangrene of the Foot. Spinal anæsthesia was employed and the patient had no shock following the operation. Since the operation the amount of sugar passed had greatly diminished. Mr. Willis also showed a case of Compound Subastragaloid Dislocation of the Foot; excision of the astragalus was followed by very good functional result.—Mr. H. B. Tawse showed a girl with a Median Cystic Swelling in the Neck. This was attached to the base of the tongue. It was thought to be a thyroglossal cyst.—Mr. K. Black showed a child 4 years old who had been operated upon for Cleft Palate and Hare-lip. The hare-lip had been operated upon when the boy was 1 week old and the cleft palate when he was 5 months old; the flap operation was performed. The result was only moderately successful as far as voice sounds were concerned.—Mr. C. H. Allen showed a man of 73 years; the patient had Sarcoma of the Thigh. Spinal anæsthesia (stovaine) was used. The limb was disarticulated at the hip-joint by means of lateral flaps. The patient suffered from no shock after this very severe operation. A microscopic slide confirmed the diagnosis.—Mr. P. Tresidder showed a girl 16 years old with Hypertrophy of the Mammæ. No operation was advised.—Dr. F. H. Jacob showed a man with severe Leucoplakia of the Tongue; in view of the possibility of future malignant disease removal of the tongue was urged by several of the members.—Dr. W. T. Rowe showed a man of 50 years with a mass of Enlarged Glands in the left groin and much œdema of the left lower limb. The symptoms had existed for three months and first started with pain in the left knee, then swelling in the groin, and finally swelling in the left leg. There was no disease of the rectum, perineum, nor of the genital organs. A diagnosis of lympho-sarcoma of the femoral glands was made and the case was considered to be inoperable.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 1st, Dr. J. Galbraith Connal being in the chair.—Dr. Leonard Findlay showed a man, the subject of myotonia, who gave no history of heredity and presented no evidence of neurosis, but was in other respects a typical case of Thomsen's disease.—Professor Walter K. Hunter read notes of a case of Elephantiasis occurring in this country. The patient was a woman aged 61, in whom swelling of the legs had begun about 30 years ago, subsequent to repeated attacks of erysipelas. For many years the swelling had been so considerable as almost to prevent walking, and ulceration had occurred in various parts of both legs. On admission to Glasgow Royal Infirmary in October, 1911, the patient suffered also from marked ascites with splenic enlargement, no apparent pulmonary or cardiac valvular disease, but slight albuminuria. Within the following four weeks the abdomen was tapped thrice, but on each occasion the fluid rapidly reaccumulated, and the patient died on Nov. 26th. Post-mortem examination showed fatty degeneration of the cardiac muscle, dense perihepatitis and perisplenitis, great enlargement of the spleen, slight congestion of the kidneys, the capsules of which were adherent, and enlargement of the

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retro-peritoneal glands. Microscopic examination by Dr. J. H. McNicol revealed marked multilobular cirrhosis and fine monolobular cirrhosis of the liver, thickening of the spleen capsule and trabeculæ, catarrhal nephritis, and hyperplasia of the lymph nodes of the retro-peritoneal glands. Sections of the skin of the lower limbs showed hyperplasia of the subcutaneous tissue, but no thickening of the epidermis nor unduly fibrous condition of the cutis vera.—Dr. J. A. Wilson read a paper on Keratitis as a cause of Myopia. He had collected a series of 100 cases of corneal opacities, and found myopia in 69 per cent., and that the average amount of myopia was a little over 3 D. The keratitis that produced the opacities was, with striking frequency, said to have followed measles. A few of the cases seemed to be due to ophthalmia neonatorum, and among those affected at an older age were some due to interstitial keratitis. In 21 cases there were opacities in one eye only, and of these 21 eyes 13 were myopic. In the 10 most pronounced cases in this section there was a total of 38 D. of myopia in the 10 nebulous eyes and only 1.5 D. of myopia in the 10 non-nebulous eyes of the same cases. Dr. Wilson then considered three possible ways in which alteration in the structure or mechanism of the eye might effect this result: (1) by stretching of the posterior segment of the globe as in ordinary myopia; (2) by increased curvature of the cornea; and (3) by yielding at the sclero-corneal junction. He found some evidence of change at the fundus; a fair proportion presented increased curvature of the cornea sufficient to account for the myopia, others presented slight increase, but not sufficient to account for the myopia, while others showed flattening of the cornea. There was also evidence in some cases of yielding at the sclero-corneal junction. The condition as a whole resolved itself into an inequality between the intra-ocular pressure and the resistance offered thereto. The treatment was discussed with this finding kept in view.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on March 6th, Dr. E S Reynolds, the President, being in the chair.—Dr. W. Fletcher Shaw read a paper on the Treatment of Placenta Prævia based upon 100 consecutive cases. He considered the best treatment for both mother and child was to leave nature alone provided the hæmorrhage was not very great and the doctor could remain in the house until the labour was over. If the hæmorrhage was more severe manual dilatation of the cervix followed by rapid extraction of the child with forceps or version gave the best results. Simple podalic version gave excellent results to the mothers but generally sacrificed the child. Packing, Champetier de Ribes's bag, and Cæsarean section he did not advocate for this condition.—Dr. C. Paget Lapage read a paper on Certain Forms of Fever of Obscure Origin in Infancy and Childhood. The more common causes of obscure fever were discussed, attention being drawn to otitis media. Blood diseases and Hodgkin's disease might be either acute or chronic with exacerbations. In such cases there might at first be no evidence of the cause until the blood was examined. Infection of the genito-urinary tract with the bacillus coli communis, either as an acute pyelitis or in a less severe form, was very important, and emphasis was laid on the need of careful examination of the urine in infants. A case of this nature with the complication of perinephritic abscess in an infant of 2 years was described. Fever due to gastro-intestinal disturbances, such as chronic intestinal indigestion, and recurrent fever due to excess of carbohydrates were also discussed, and a case of fever from overfeeding with breast milk described. Finally, meningitis was dealt with.

EXTENSION OF CHESTER INFIRMARY.—The scheme for the extension and renovation of Chester Infirmary is to be proceeded with directly the necessary formalities have been completed. The board of management has accepted, out of 13, the tender of J. Mayers and Son, of Chester, for £37,490. Although no appeal has yet been made, a sum of £42,338 has already been promised towards the £40,000 which it is estimated will be required. The President (the Duke of Westminster) has promised £3000; Mr. Albert Wood, of Conway, £12 500; Mr. George Barbour, £1000; Messrs. Frost and Sons, £1000; the Mayor of Chester, £20; and in addition there is an anonymous donation of £1000. £1397 have also been realised from the pageant.

Reviews and Notices of Books.

1. *The Individualization of Punishment.* By RAYMOND SALEILLES, Professor of Comparative Law in the University of Paris and in the College of Social Science. Translated from the Second French Edition (1908) by R. S. JASTROW. London: William Heinemann. 1911. Pp. xxxviii.–322. Price 16*s.* net.
2. *The Modern Prison Curriculum.* A General Review of our Penal System. By R. F. QUINTON, M.D., late Governor and Medical Officer of H.M. Prison, Holloway. London: Macmillan and Co., Limited. 1912. Pp. 276. Price 5*s.* net.

IN both of these books, but, as we shall see, from different points of view, the objects and methods of punishment for crime are discussed. The much larger work by Professor Saleilles consists mainly of historical and scholastic disquisitions on the principles of punishment, while Dr. Quinton's book reviews the English prison system in its relation to the assumed objects of punishment, reform and restraint.

1. M. Saleilles's conclusions regarding what he names the "individualisation of punishment" appear to us as neither new nor commensurate with the elaborate process of his argumentation. His style, moreover, is marked by a wearisome iteration of phrase, and often by an indefinite or inappropriate use of words. It must be remembered, however, that some of these blemishes may be attributable to the fact that the book before us is a translation. Considerably more than half of this work is devoted to a somewhat nebulous discussion of such time-worn questions as responsibility, free-will, determinism, &c.; and seeing that the author's object is to advocate the individualisation of punishment and the consequent necessity of studying the criminal's personality as a whole in its nature and surroundings, we need to know exactly what he means by the terms he frequently uses. Yet we nowhere find a clear statement of what he means by "responsibility," and we wonder what sense he attaches to the word "freedom" which he speaks of variously as "a state of positive action," as "a moral conception," as a "datum of the personal consciousness," as "a capacity," and as "based on an individual belief." It is true that this book is based on a course of lectures delivered from a legal chair, and does not explicitly profess to be a treatise on criminal psychology. But in so far as the author's plan involves the introduction of some psychological and biological assumptions, as evidenced, for instance, by the use of the word "natural" as applied to criminality, as well as of many psychological terms, the absence of precision of language and clarity of style is much to be regretted.

In advocating the adjustment of punishment, not to the social gravity of the actual crime committed, but to the complex personality of the individual himself considered as a whole and in relation to his surroundings, M. Saleilles does but reiterate what most modern penologists are essaying to compass—the appropriate treatment of the criminal rather than either the exclusively retributive punishment for the crime committed, or, on the other hand, punishment for the exclusively social purpose of deterring others. In expressing his views on this he propounds an arbitrary division of criminals into three classes: the accidental criminal, who is psychologically normal and therefore responsible; the "incorrigible" criminal; and the criminal who presents a "natural criminality" which is to be eradicated and is amenable to reformatory treatment. The purely *deterrent* punishment, he says, is fitted for the accidental criminal; he is "psychologically normal and needs no reform." For the "incorrigible" the proper treatment is either *detention*

or *elimination*, in order to protect society. *Reformatory treatment* is to be reserved for the large intermediate class who are assumed to be "natural criminals." Yet, when speaking of the accidental class, assumed to be normal and responsible, the author contends that their normality is "not an original and wholly spontaneous condition, but a slow and progressive one [? acquired] which may disappear." For all this he justifies for them, as we have seen, a purely deterrent punishment. The true criminal, however, of the large intermediate class which he deems reformable is, in his opinion, a "natural criminal," an abnormality. But why "normality" should be at least partly of slow and progressively acquired growth, while abnormality is "natural," or what is meant by all these terms is nowhere explained; and it would thus seem that no one can be blamed for not understanding the implied denial of "responsibility" (whatever this word may be taken to mean) to the *reformable* criminal merely on the dogmatic assumption that he is "abnormal."

Many modern writers about penology do not perceive the simple fact that whatever "treatment" be applied by law to the criminal or law-breaker of any kind—no matter what the explicit object of the treatment may be—*must* be "punishment," and by consequence disagreeable. If a man be physically or mentally hurt, or fined, or deprived of anything of which he feels the loss, or restrained in any degree whatever from the full exercise of the legal liberty which is common to all men, that man *is* punished; he suffers pain. Further than this, whatever may be preached to the contrary, the most enlightened public opinion justifies that suffering on the ground, perhaps not always explicitly recognised, of the still living principle of retributive justice. If this principle were no longer vital, society itself would disapprove of inflicting pain of any form on a man in order only to deter others from committing crime; or, indeed, on the sole pretext of reforming him or doing him good. Be this, however, as it may, there is no possible system of dealing with or treating a criminal without "punishing" or hurting him. We may remark, by the way, that though there is no object in detaining insane persons, except for the good of themselves and the community, the pain of loss of liberty is suffered by them as much as, or perhaps more than, by most criminals; and that in the deprivation of privileges within asylums many insane persons both feel and profit by this form of punishment, which is practised and justified on the principle of deterrence applicable both to the individual concerned and to his fellow inmates.

Professor Saleilles, with many of his contemporaries, fails to perceive these things. If he had followed the example of a great criminal judge in this country, and insisted on the necessity of a clear conception of the meaning of the word "responsibility" in relation to crime and its punishment, he might have saved himself from much of the laborious logomachy which mars this book; and need not have entered into the arena where Free Will and Determinism are eternally fighting for the crown. Both of these combatants, like materialist and idealist philosophers, are practically at one in their methods when dealing with human affairs, however they may disagree in theory. Though the idealist may preach that science can deal only with phenomena and their inter-relations, he cannot, in practice, rid himself of the dominant notions of causation and reality; nor can any social student or moralist, whatever his "credo," deny the practical freedom, within the everyday sphere of action, of most men to choose their course of conduct. Responsibility, in the only sense which concerns penologists, must mean, as Sir James Stephen contended, "liability to punishment"; and, as Dr. Mercier has shown in his clearly reasoned book on "Criminal Responsibility," the further qualification is needed that the liability must be "right"—i.e., in accord with the general contemporary social sentiment. But M. Saleilles, in attempting to rid himself of the difficulty of dealing with the notion of the responsibility of criminals, which he admits that criminologists cannot afford (*sic*) to ignore, is led to indulge in such writing as this (see p. 272): "Instead of measuring or estimating the degree or extent of freedom exercised by the criminal we should look at the relative depravity of the emotion that incited to action. The subjective criminality of the action is to be substituted for responsibility." Even if this remark should be deemed intelligible when studied in its context, it is not easy to see how it helps the student of penology.

A little further on (p. 274) we find it written: "Having thus reached the heart of the question, let us supply a definite constructive system of specialised punishments to be applied according to the moral temperament of the criminal." Here follows more preliminary postulation before the practical issue is reached. There is, it is argued, static (or passive) and dynamic (or active) criminality; active criminality should determine the duration of the punishment; passive criminality, or "character," should determine the nature or kind of punishment. Criminals, therefore, must be classified psychologically in order to reach an adequate classification of punishments. But here the author makes a halt, or almost a *volte-face*, and warns us against the "serious primary difficulty of losing ourselves in minute details and distinctions." We must not go too far into the investigation of *causes;* "we lack a sufficient scientific criterion for this; we must not aspire to the impossible lest we descend to the ridiculous. All we can do is to classify criminals with reference to the provisions at our command, which are limited to measures of repression, together with suitable varieties of discipline." "The *law* should not go far into the causes and types of crime, into heredity, environment," &c., but should "confine itself to social standards" and deal chiefly with the *degree* of crime. The classification should be adapted to the results which the law seeks to secure. Finally, after more circumlocution, the author urges that there is a fundamental and ancient three-fold classification which is "classic" in its traditions and has not yet been replaced. It includes (1) offenders without true criminality; (2) offenders whose criminality is but superficial; and (3) offenders tainted with a fundamental, and thus ineradicable, criminality—the incorrigible. This, he urges, is a "fundamental" division, to which should correspond the three classes of punishment—"deterrent," "corrective," and "protective," this last word implying, we presume, solely the protection of society. This conclusion is offered as a "basis and point of departure for future criminal law"! Apparently, if the inquiring penologist examines this somewhat addled egg, which has undergone such a tedious and prolonged term of incubation, the pabulum he will find is this: the offender who has "no true criminality," or, in other words, the "normal" man, must be punished for the sake only of deterring others. The offender whose criminality is superficial must be punished with a view to reform, while the "incorrigible" is to be punished for the sake of society; or, in other words, the least criminal and the most criminal are to be punished for the sake of others only, while the intermediate offenders, who are by far the more numerous, are to be punished primarily for the sake of themselves. To round off this gospel of penology, which is something strange though not altogether new, M. Saleilles says that even the *judicial* individualisation of punishment (which he has before stated to be the best kind of individualisation) is inadequate; that the classification of offenders and punishments must be general, as it is

impossible to consider an indefinite variety of punishments adjustable to the precise moral temperament of each individual. Therefore the law must give to the *administrators* of punishment sufficient power to adjust discipline to educational and moral requirements. For reformation and moral regeneration no fixed term of punishment is appropriate. The criminal must be treated like a patient—in the moral sphere. And the treatment he prescribes is the indeterminate sentence and detention in institutions of the type first known in the establishment of the Reformatory at Elmira in the State of New York.

It is clear to anyone duly conversant with the practical side of penology as well as with the principal literature of the subject that, however erroneous and nebulous, or however profound and scientific, M. Saleilles's theory and doctrine may be deemed by critics to be, the three classes of offenders that he exhibits to the reader of this book are just the same as have long been recognised under other names by most modern penologists: the accidental offender (a large class), whom *detection* alone is generally sufficient to "cure," whatever the nature of his "crime" may have been; the ordinary heterogeneous criminal of many colours (also a large class), who is but little deterred by loss of liberty and other apparent inconveniences which form the sum total of most modern "punishments"; and the "incorrigible," who, whether approximately sane or frankly insane, cannot be in any way impressed for the better by any punishment at all. But it must be remembered that there is no "natural" class, including all incorrigibles; nor can the diagnosis of incorrigibility be made without personal study of each case. It may indeed be said that after deducting such criminals who, apart from their actual crime, show marked evidence by their general conduct of mental defect in some sphere, it is rash to say that anyone is incorrigible. Even the ablest and most inveterate offender, who forges or steals or embezzles as a profession in spite of frequent detection and punishment, and without the initial temptation of poverty, may either from very weariness or belated reflection turn over a new leaf. But there is no means in such cases of making an early forecast of the probability of such a spontaneous reform in any individual case, and most of them should be detained for the benefit of society.

As the author proceeds to the more practical or constructive part of his essay he seems somewhat less troubled with the numerous speculative difficulties which he has raised and laboured to grapple with in the earlier pages. Treating in his last chapters on the legal, judicial, and administrative individualisation of punishment he warns against "false sentimentality" and says: "Obviously punishment must be severe, otherwise it would not be a penalty; it would cease to intimidate"; and he congratulates, in all justice, "the French school on its acceptance of truth, wherever it finds it, without too close allegiance to systems—a school of practical methods and happy solutions, one of good sense and fine Gallic insight." In spite of our criticism of this particular French book our French *confrères* will doubtless justify us in claiming some "Britannic" insight into penological questions on similar grounds to those put forward by M. Saleilles on behalf of his countrymen. While freely admitting that the criminological literature of England cannot compare with that of France either in quality or quantity, the course of penal legislation in Great Britain shows that we too adopt practical methods and happy solutions without too close allegiance to systems.

2. A study of "The Modern Prison Curriculum," by Dr. Quinton, will help to justify the claim just made. The author, who is an experienced medical officer and prison administrator, writes about what he has seen and reflected upon himself. He has, he says, "no startling theory to propound on a subject about which the evident differences of opinion are consistent with a genuine desire to promote progress." The general view he holds recognises the interests of society as a legitimate factor for consideration in the settlement of penal policy, but does not ignore the rights or interests of the criminal. We think that his book successfully supports his contention that the interests of society and those of the criminal in this country correspond in the long run much more closely than most people imagine. Although he is careful to emphasise his opinion that reluctance to punish and reluctance to detain criminals are signs of the times which are not wholly without drawbacks, Dr. Quinton fully recognises the value of the most modern methods and proposals in the direction of reforming criminals and of the prevention of crime, such as have been instituted by the English modification of the Elmira treatment, known as the Borstal system, or adumbrated in a late scheme for "suspension of sentence." In the whole of this general review of our penal system the author shows that he is well informed in the literature of penology and of the practice of other countries, and that his comments on both the virtues and defects of existing systems of punishment are the result of no small knowledge.

The chapter on "Reclamation" appears to us to give due weight to the increased importance rightly attached by modern public opinion to all possible efforts directed towards the reformation of persons convicted of crime, while keeping clearly in view the desirability, as well as the general *inexorability*, of the element of punishment, if only that of enforced detention, in order to compass this object. In this connexion the actual advantages and proved success of the Borstal system in England in the treatment of youthful offenders are well set forth. This system, devised by Sir Evelyn Ruggles Brise, has been tried now for several years, and was definitely formulated and established by the Prevention of Crime Act of 1908, which ordained that certain classes of juvenile criminals could be sentenced directly to reformatory treatment instead of being sent to prison. We find also in this chapter a thoughtful appreciation of the new legislation contained in Part II. of the above-mentioned Act, which is concerned with the treatment of persons sentenced to penal servitude and found by the court to be "habitual criminals." This legislation is but now about to take effect, all criminals sentenced to preventive detention since the passing of the Act having been obliged to serve their penal sentences before entering on the period of further detention. It is not possible, therefore, at present to make any useful forecast of the result of this measure, which is intended to prevent the commission of crime by the habitual offender and at the same time to encourage all possible efforts at reclaiming him. It appears to us that since the maximum period of preventive detention is but ten years, and since the Secretary of State has power to shorten this period at any time by earlier discharge on licence, the success of this part of the Act will depend wholly on the way it is administered in each case. This experiment in the direction of the "indeterminate sentence" will be watched with deep interest by all students and practical administrators of penal measures.

We congratulate Dr. Quinton, who had the advantage of exceptional opportunities of studying mentally defective criminals at the convict prison at Parkhurst for many years before he was appointed to the Governorship of Holloway prison, on having made such good practical use of his professional knowledge and experience. Although this book will primarily attract the attention of penologists, it will not fail to be of considerable interest to many medical readers.

The Internal Secretions and the Principles of Medicine. By CHARLES E. DE M. SAJOUS, M.D., LL.D., Professor of Therapeutics in the Temple University of Philadelphia. Fourth edition. London: Stanley Phillips. Philadelphia: F. A. Davis Co. 1911. Two Vols. Pp. 1873. Price 50*s.* net, cloth; half morocco, 63*s.* net.

IMPRESSED with the shortcomings of physiological science as at present set forth by its votaries, the author attempts in the book before us to construct a new system of physiology based on the importance of the ductless glands. We cannot attempt within the compass of a review to give more than an imperfect sketch of his *novum organum*. Put shortly, the basis of life is the secretion of the suprarenal glands, which supplies the oxidising principle to all living tissues. This secretion is carried to the lungs by the vena cava inferior, and there some of it is taken up by the erythrocytes and combined with hæmatin to form hæmoglobin. The important part of the blood is, however, the plasma, the red cells only forming a storehouse for the "adrenoxidase" as the principle is named. The plasma of the blood penetrates all organs and excites their activity. Thus, carried to the muscles it combines with myosinogen and gives rise to muscular energy. Carried to the nerves, it produces nervous energy, by the action of the oxidising ferment on the lecithin of the myelin sheaths, which stands to nerve in the same relation as myosinogen to muscle. The so-called axis-cylinders are merely tubules through which the ferment flows. Indeed, not only is adrenoxidase a ferment, it is the ferment of ferments, as it enters into the composition of all ferments, which consist of this substance in combination with nucleo-protein and a specific zymogen. In the case of the pancreatic ferments, the zymogen of trypsin is secreted by the islands of Langerhans, that of the amylopsin by the other cells of the gland. Products of digestion are taken up by the leucocytes and by them conveyed to the cells of the tissues. Thus neutrophile leucocytes supply myosinogen to the muscles, basophile cells convey myelin, derived from fats, for the use of the nervous system.

But if the suprarenal glands are thus all-important, they are themselves subject to the control of a higher centre—the pituitary body. This organ is in part a test organ, the homologue of the "osphradium" of mollusca, which is supposed to test the purity of the water in which the animals live; but it is also a most important nerve-centre, controlling all vital functions. Among other duties, it controls the immunising processes of the body, regulating as it does not only the suprarenal functions but also those of the thyroid and parathyroid bodies. Of the substances active in immunity the amboceptor is only adrenoxidase, while the opsonins and agglutinins, and to some extent antitoxins, consist of thyroid secretion. The latter is also an important stimulant to cellular activity, its iodine constituent regulating phosphorus metabolism. Incidentally Dr. Sajous denies that the cells of the thyroid are epithelial in nature, regarding them as leucocytes. The concluding chapters of the second volume set forth a theory of therapeutics founded on the foregoing physiological basis. Interspersed among the theoretical discussions are valuable accounts of the different diseases, such as Graves's disease, acromegaly, cretinism, and so forth, generally recognised as due to disturbances of the functions of the ductless glands.

So far as the new physiology is concerned, we must admit that, taken in bulk, it is rather too big a dose. That existing physiological knowledge is sadly defective we readily admit; indeed, if we were to subtract from an ordinary text-book all descriptions of instruments and all purely hypothetical explanations, the remaining body of facts—or as Sir Clifford Allbutt would prefer to say, truths—could be compressed into a very moderate-sized volume. But Dr. Sajous's system is too revolutionary to be accepted without much stronger evidence than he here affords. Indeed, the arguments, though supported by a vast amount of painstaking research in the byways of physiological literature, seem rather flimsy. Thus it hardly follows that because iodine and phosphorus react chemically, therefore the thyroid secretion, containing iodine, is the controlling agent in vital phosphorus metabolism. Nor do the facts that chlorine and hydrogen combine at a temperature of 39·5° C. and that the warmth of the gastric cavity is about 38° C. help very much in understanding the formation of gastric juice. These are merely samples of the reasoning employed. If, however, we cannot subscribe to the author's conclusions we cannot fail to recognise the diligence with which he has collected all possible information bearing on the subject of his studies, while some of his speculations, as, for example, the suggestion of the homology of the pituitary body, are interesting and ingenious. Incidentally, we may question whether oxyphile cells are to be understood as "oxygen-loving," the term merely implying affinity for "acid" dyes; while "*extra corpore*," a frequently recurring phrase, would, we fear, hardly pass muster in an English school.

An Index of Treatment by Various Writers. Edited by ROBERT HUTCHISON, M.D. Edin., F.R.C.P. Lond., Physician to the London Hospital and Assistant Physician to the Hospital for Sick Children, Great Ormond-street; and H. STANSFIELD COLLIER, F.R.C.S. Eng., Surgeon to St. Mary's Hospital and Surgeon to the Hospital for Sick Children, Great Ormond-street. Sixth edition, revised and enlarged. Bristol: John Wright and Sons, Limited. 1911. Pp. 1039. Price 21*s.*

THE first edition of this excellent work was published in November, 1907; the fact that it has now reached the sixth edition is sufficient proof of the extensive favour with which it has been received by the profession at large. In preparing a new edition, opportunity has been taken to revise thoroughly all the old articles and to include several new ones. Amongst those appearing for the first time are puerperal sepsis, hydro-, photo- and thermo-therapy, and treatment by carbonic acid snow. The last-named agent is of special interest to dermatologists. For instance, capillary nævi may be completely removed by a single application of forty seconds' duration with firm pressure. Moles and warts can also be successfully removed by this method. One of the latest of the many satisfactory applications of solid carbon dioxide is in the treatment of rodent ulcer. Details are given of the preparation and application of the remedy.

We can cordially recommend this work to all practitioners. It contains a vast amount of valuable information arranged for ready reference. It is most complete as regards both medical and surgical affections, and therefore will be found especially valuable to the general practitioner.

A Manual of Diseases of the Eye. By CHARLES H. MAY, M.D., New York, and CLAUD WORTH, F.R.C.S. Eng. Third edition. London: Baillière, Tindall, and Cox. 1911. Pp. 427. Price 10*s.* 6*d.* net.

IN the third edition of May and Worth's "Manual of Diseases of the Eye" the general character of the work is maintained, and it has been brought up to date. The most important addition is a chapter on vaccine therapy, by Mr. S. H. Browning, bacteriologist to the Royal London Ophthalmic Hospital, than whom no one in England is better qualified to write upon this special branch of the subject. The wealth of coloured and other illustrations, the conciseness and accuracy of the text, and the wholly practical nature of the teaching make this book especially attractive to the student of medicine who has only a limited time to devote to this particular branch of his subject. For him,

and as an introduction to more exhaustive study of ophthalmology, the book can be confidently recommended as a reliable guide. Considering the severe restrictions which the authors have set themselves, a wonderful amount of information is conveyed in a small space. It is well marshalled, so that the relative importance of various pathological conditions is duly emphasised—a point not infrequently lost sight of in some larger text-books. Particularly commendable are the short anatomical introductions to the chapters on the diseases of the different structures. They show an appreciation of the scientific basis of pathological detail which cannot be too thoroughly inculcated into the student's mind, and which creditably distinguishes this work from the ordinary cram book. The use of heavy type and short paragraphs simplifies the reader's task, and occasional tables of differential signs and symptoms facilitate recapitulation.

Modern German Hospital Construction. By WILLIAM MILBURN, jun. London: Royal Institute of British Architects. Pp. 142. Price 3*s.* 6*d.* net.

IN a compact form and with numerous illustrations Mr. William Milburn, jun., A.R.I.B.A., has given us a graphic description of the construction of hospitals in Germany. This is a welcome contribution to a highly technical subject, and it is good to see with what scientific care and studious forethought the Germans have endeavoured to build hospitals that will render the maximum service. Hospital building in Germany is not left, as it recently was with us, to the fancy of a few charitable persons; it is treated as a national problem. The compulsory insurance against sickness makes the prevalence of illness a matter that affects the entire population, since those who are well have to pay for those who are sick. Every town must provide at least one hospital, and the municipalities of large towns build, equip, and maintain several hospitals. All classes are admitted to these hospitals, but the patients pay from 2*s* 6*d.* to 15*s.* or 20*s.* per diem, according to the accommodation provided. The medical and surgical staff are paid for their services. The university hospitals, or "Royal Clinics," are the centre of medical education and study, and these are maintained by the State. Nevertheless, something yet remains of the old days when the poor had to depend on private charity and voluntary subscriptions, generally organised by some religious body. Thus, we still have denominational institutions in Germany of the kind so well typified by the Jewish Hospital at Cologne.

As a great number of the hospitals are of recent construction the sites selected have been suitable in view of the modern extension of the large towns. Care having to be taken to secure ample space, pure air, light, and freedom from noise and dust, the hospitals are mostly found outside the towns and on the side where the prevailing winds should not be overcharged with the results of commercial industry. The area of the site per bed varies from 72·7 square yards at St. Georg, Hamburg, to 152 square yards at the Virchow Hospital, Berlin. But for the most part it seems to us that the German hospitals are too large. The Hamburg Eppendorf and the Virchow at Berlin have more than 2000 beds, and in our opinion half that number of beds are as much as can be conveniently managed in any one establishment. Nearly all the large towns have one general hospital, but there are two at Dresden, three at Hamburg and Munich, and four at Berlin. A general hospital should provide for all class of medical and surgical cases, including maternity, children's diseases, and venereal diseases. The greater part of the medical staff have to reside on the premises. The nursing staff is organised on much the same lines as in England. The building of modern hospitals date from the construction of the Moabit Hospital at Berlin in 1872. It is acknowledged that the great reform then commenced is based on the lessons learnt during the Franco-German war of 1870–71. The Moabit Hospital consists of pavilions of only one storey well separated one from the other.

Mr. Milburn gives the ground plan of all the leading hospitals, and notably the Eppendorf Hospital at Hamburg, with its 2150 beds and its staff numbering 820, of whom 670 live on the premises. There are here no less than 100 separate buildings, of which 85 are for the patients. Then the details are considered, such as the construction of the administrative blocks and their relation to the reception hall. The possibility of patients introducing infectious diseases and the painful sights when accident cases are brought in are also taken into account. At Charlottenburg West End this difficulty is overcome by admitting patients to a one-storey wing with a separate entrance on one side of the administration block, and this is balanced by a similar wing at the other end containing the dispensing department. Then we have plans and photographs of aseptic and septic operating theatres, for both are provided in most of the hospitals, that of St. Georg Hospital at Hamburg being considered among the best. The methods of heating and ventilating are dealt with, though only briefly, both with regard to operating theatres and the sick wards. In this respect we are told that in mild weather natural ventilation is preferred, and for this purpose the English sash window is not approved, for only half the area of the window can be opened. Mechanical ventilation is indispensable in the colder weather, and in some cases it is necessary to filter and humidify the air before it is admitted into the wards. The usual amount of air demanded in the specifications for large wards is 2650 cubic feet per bed renewed twice per hour. In the lavatories the change should be five times in the hour.

Much other useful information is given on thoroughly practical questions, and the volume should prove of use to all who are interested in hospitals.

Handbuch der Pathogenen Mikroorganismen. Herausgegeben von Dr. W. KOLLE und Dr. A. VON WASSERMANN. Zweite vermehrte Auflage. Jena: Gustav Fischer. 1911 and 1912. Pp. 200, 128, and 160. Price 5 marks each.

THE third instalment of the second edition of this important work deals with the general morphology and biology of pathogenic micro-organisms; and it completes the account of the occurrence of pathological organisms in water, in various articles of food, and in the houses and clothes of human beings. The next section is concerned with the general methods of bacteriology. The microscope with its various adjuncts suitable for bacteriology is described, and a good account is given of the methods of examination of preparations, both unstained and stained. The last portion of this part deals with the culture of bacteria. In the fourth instalment this subject is continued, and is followed by a section dealing with the examination of tissues, air, and water for bacteria. The employment of animals in the investigation of bacteria is described, and the final chapter deals with auxiliary apparatus in the investigation of bacteria. The fifth instalment consists of a very full account of the bacteriology of cholera and the question of the possibility of producing immunity against it. The thoroughness with which the subject is treated will be recognised when we say that the account of the cholera bacillus occupies 109 pages. The subject is considered from every possible point of view with satisfactory results.

The re-issue of this valuable work contains much more than the first edition, and will be most valuable to the bacteriological laboratory.

LIBRARY TABLE.

Shop Slavery and Emancipation. By WILLIAM PAINE. With an introduction by H. G. WELLS. London: P. S. King and Co. 1912. Pp. 125. Price 1*s.* net.—The hard lot of the shop assistant, more especially in the drapery and grocery trades, is only one more of the evils resulting from modern industrialism and the reign of the big store. Mr. Paine draws a dismal picture of the wretched state of the shop assistant under the living-in system, a picture which Mr. Wells, who speaks from personal experience, says is in no way overcoloured. Mr. Paine's remedies may be divided into two. Firstly, in order to get rid of the "living-in" system he strongly recommends the establishment of hostels, such as those inaugurated in Edinburgh by Professor Geddes for young graduates and students of the University (p. 60), or again for shop assistants, sempstresses, clerks, and the like, both men and women, in a Midland manufacturing town. If such a system is found to be successful in these two instances there should be no insuperable difficulty in extending it to other towns. The other, and more general, remedy is that sketched by Mr. Paine in Chapter VI., entitled "The Way Out," a plan of which Mr. Wells says, "I do not at present see any prospect of its immediate and special application to the employees of the distributing trades." Mr. Paine's idea is, if we understand him rightly, the formation of an organisation which should be capable of bringing about a sectional or universal strike. The first step towards this organisation is "the reckless love of comrades, and the development through it of a reckless note of desperation." We can quite see the point of view from which Mr. Paine writes. Every wage or fee or salary earner wishes for reward proportional to work, and also for the right to do his work without subjection to irritating control. These are the benefits for which the medical profession is at present fighting, and there is no reason why other professions, occupations, or trades should not fight for them too. Mr. Paine's little book is certainly worth reading and thinking over, not only by the employers chiefly concerned, but also by the rest of the British people, who are all "shoppers" at one time or another, and especially by members of friendly and coöperative societies.

Heredity in Relation to Evolution and Animal Breeding. By W. E. CASTLE. London and New York: Appleton. 1911. Pp. 184. Price 6*s.* net.—Dr. Castle, who is professor of zoology at Harvard, is the leading exponent in the United States of experimentation and theory along the line initiated 50 years since by Mendel. In the volume before us he sums up in a perfectly intelligible fashion the leading conclusions to which cross-breeding along Mendelian lines has led us, conclusions with which we are in this country very familiar by virtue of the striking work of Professor Bateson and others who think with him. The author addresses this little *résumé* to students and general readers, which latter class is always hopefully viewed by those of us who write books. It is to be doubted, however, whether the general reader comes up to our sanguine expectations. The present volume, for example, needs for its due understanding a very considerable appreciation of the minute histology of the sexual cells, to attain to which understanding needs much study at first hand. For the real student, on the other hand, who is not well acquainted with the department of biology interpreted by Professor Castle, this work contains an admirable survey of what he must know in the matter before proceeding to deepen and widen his outlook upon the problems of heredity, and to such it is to be heartily commended as a valuable introduction. The student can hardly stumble while following Professor Castle through the graduated series of conclusions to which the facts of crossing lead. The author begins his illustration of the Mendelian theory by a perfectly simple case of mating of a black and a white guinea-pig; these and their offspring are figured in reproduced photographs, and the whole process of crossing is displayed in a diagram so plain that it can be followed by the most slowly moving intellect. Thereafter an expansion and inevitable complication of the previously simple facts should find the reader prepared.

MISCELLANEOUS VOLUMES.

WE have received a number of small text-books, chiefly of a practical type, on chemistry, physics, chemistry and physics, analysis, elementary hygiene, and so forth, which may conveniently be reviewed together.

In *A Practical Hygiene* (Newcastle: Doig Brothers and Co., Limited. Pp. 31. Price 1*s.* 4*d.* net) Mr. J. STEPHENSON has collected an interesting series of simple experiments illustrating hygienic principles and applications. The work is quite well done and the directions are free from ambiguity. The illustrations are neat and the instructions for performing the more important tests are in the main in tabular form. Air, water, food, soil, poisons, heating, and lighting are amongst the subjects and materials which the reader is instructed to examine.——*Practical Chemistry for Medical Students*, by ALEXANDER CHARLES CUMMING, D.Sc., and J. WALKER (Edinburgh: James Thin. Pp. 171), is the title of a book prepared for the use of students attending the medical practical chemistry class in the University of Edinburgh. From a glance at the subject matter it is evident that the book will meet the requirements of students elsewhere. It is essentially a companion for the laboratory bench, and the paragraphs are eminently practical in character. As far as we have examined them the tests described are free from pitfalls. The sections on preparation of simple salts and volumetric analysis are valuable.——*Experiments in General Chemistry*, by JOSEPH H. JAMES, B.S., Ph.D., and JOHN A. SCHAEFFER, A.M., Ph.D. (New York: McGraw-Hill Book Company. Pp. 118. Price 4*s.* 6*d.*), is written chiefly for engineering students. The authors put the experimental directions in clear terms, and have chosen materials which are appropriate for an elementary practical course with engineering applications in the foreground. The sections on galvanising, water purification and clarification, common materials and rocks, industrial applications of the heat developed in intense chemical reactions, are cases in point. The book thus supplements "a course of lectures and quizzes," and so may be a useful companion to the general text-book.——The same publishers have issued *Experimental General Chemistry*, by JAMES H. RANSOM, Ph.D. (Pp. 145. Price 4*s.* 6*d.* net), which exclusively presents the experimental side of general principles. The object of the book may be gathered from a statement in the preface to the effect that the experiments set out require about 125 hours of laboratory work, but by omitting a few of those marked "optional" the work can be completed in three hours per week. This suggestion narrows the scientific value of the book.

In *A Handbook of Physics and Chemistry*, by HERBERT E. CORBIN, B.Sc.Lond., M.R.C.S. Eng., L.R.C.P. Lond., D.P.H., and ARCHIBALD STEWART, M.A. T.C.D., B.Sc. (London: J. and A. Churchill. Fourth edition. Pp 519. Price 7*s.* 6*d.* net), we find evidence of an earnest endeavour to help the student preparing for the Conjoint Board examinations, and the syllabus of work in physics, inorganic chemistry, and organic chemistry issued by the Royal Colleges of Physicians of London and Surgeons of England has largely guided the authors as to scope. In the present edition some additions have been introduced—e.g., the polarisation of light and the

Roentgen rays, in accordance with recent advances upon the subjects, but it is disappointing to find no reference to the ionic theory of solution. In these days, when the dissociation theory has led to definite applications in medicine, we should expect to find in a comprehensive handbook a few words about it, more particularly as that book is intended for students of medicine. The illustrations are copious and well executed.——With a similar end in view, Mr. HUGH C. H. CANDY, B.A., B.Sc., F.I.C., has written his book, *A Manual of Physics* (London: Cassell and Co., Limited. Pp. 384. Price 6*s.* net). There is no attempt here to couple with physics the chemistry required by the Examining Board in the same volume. That is dealt with in *A Manual of Chemistry* by the same author, of which we have also taken a favourable view. The manual on physics bears evidence of the writer's practical acquaintance with the needs and opportunities of the medical student, for whom primarily it has been written. In spite of a fair sprinkling of mathematical formulas his account is not involved, and, of course, the student is intended to keep the manual by him when attending practical demonstrations, in which case it will aid his memory and understanding.——An eminently practical book is *Notes on Practical Physics*, by A. H. FISON, D.Sc. (London: Edward Arnold. Pp. 144. Price 3*s.* 6*d.*). The experimental directions are clear and concise, and the examples chosen form an excellent foundation for more elaborate work. His advice and suggestions are a model of sound teaching.——An interesting feature of *Elementary Experimental Chemistry*, by F. E. WESTON, B.Sc., F.C.S. (London: Longmans, Green, and Co. Pp. 140. Price 2*s.*), is the insertion of historical references to the chemical substances under experimental observation. We should like to see this plan in elementary text-books more general than it is, for there is a risk of losing sight of the early work of pioneers and of the time which has elapsed since this work was done. Mr. Weston's book contains a number of familiar experiments, and he has presented them in a wise order, so that the student begins with matters essential to the understanding of the final chapters.

The needs of those beginning their studies are again carefully studied in *Elementary Quantitative Analysis*, by F. M. OLDHAM, B.A. (London: Mills and Boon, Limited. Pp. 90. Price 1*s.* 6*d.*). The course in volumetric analysis (Part I.) and that in gravimetric analysis (Part II.) are well arranged and the directions are clearly outlined. We do not like the following expressions: "Calculate the weight of SO_4 in the barium sulphate and hence the percentage of SO_4 in the copper sulphate," or "in this way the weight of PO_4 ..... can be determined." SO_4 and PO_4 do not exist as separate entities and cannot be weighed. The method reminds us of an instruction (often found in text-books) such as the following: "Drop a small piece of K into a basin of H_2O," or "Put a small piece of P in a deflagrating spoon." The author has provided a simple working course of elementary quantitative analysis.——In *A Handbook of Organic Analysis*, by HANS THACKER CLARKE, B.Sc. Lond., A.I.C. (London: Edward Arnold. Pp. 264. Price 5*s.* net), we find a fairly wide field of organic substances covered. We quite agree with Dr. J. Norman Collie in the introduction which he has written to this book, that at the present time hardly any books exist which deal with the systematic testing of organic substances. Many there are which describe their preparation or give quantitative methods or deal with the special analysis of distinct classes of compounds, "but the book that would enable the chemist to find out qualitatively the nature of the multitudinous carbon derivatives met with in ordinary work in an organic laboratory—that book is wanted." The most valuable, as it is the biggest, section of this book is the one containing classified tables of common organic compounds. These tables will be of the greatest service to the chemist in his attempts to recognise unknown organic substances. The chapters on general matters are also good. Mr. Clarke's work is sure to be appreciated, and not the least because he has initiated an excellent movement to reduce the testing of organic substances to something like system and order.

New Inventions.

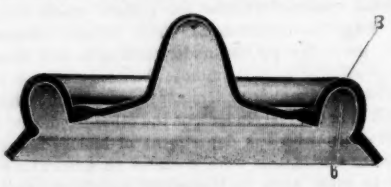
THE "HYPOSOL" AMPOULE SYRINGE.

Messrs. Allen and Hanburys, of Lombard-street, London, E.C., have introduced a very ingenious form of ampoule syringe, which is intended to obviate most of the troubles and disadvantages incident to the subcutaneous injection of drugs. It is essential that the syringe, the needle, and the solution employed should be completely sterile; this is of the first importance, and usually no little time is taken up in preparing these for the injection. By the use of the ampoule syringe the greater part of this time is saved. A dose of the solution is contained in a sealed glass tube, which is drawn out at each end. In the tube at one end is a firm plug which acts as a piston. A sterilised needle is contained in a separate sealed glass tube. Before administering an

injection the two ends of the tube containing the solution are marked with a file and are then broken off. On one end of the tube which has been ground to a standard size the needle fits, and through the opening in the other passes a little rod, by means of which the piston is pushed down the tube, and in this way the injection is given with no risk of infection. Thus it is seen that the ampoule itself forms the syringe by which the solution is injected. The specimen tube sent to us worked quite satisfactorily, and the preparation occupied only a few seconds. The cost is by no means prohibitive. Most of the tubes of solution are supplied at 8*d.* each, but it must be remembered that the use of the ampoule syringe renders an ordinary syringe unnecessary, with its occasional need of repair. Vaccines prepared by the Lister Institute of Preventive Medicine can also be obtained in this form, but the cost is naturally higher.

A NIPPLE SHIELD.

THIS appliance, invented by Dr. A. Stern, is made of rubber and can be cleansed by boiling. Round the shield is a rubber margin forming an elevated circle (B) raised above the surface. In applying the shield the edges are drawn out so as to obliterate the raised portion, and as this tends to assume



its original form, on its doing so a vacuum is formed which keeps the shield tightly applied to the surface of the breast. The shield has been used by many obstetricians abroad, and is favourably reported upon. It is supplied by Messrs. A. Strauss-Collin, Bush-lane House, Cannon-street, London, E.C., and Frankfort-on-the-Maine.

THE LANCET.

LONDON: SATURDAY, MARCH 23, 1912.

The National Insurance Act: An Indictment.

DURING the past few months several books have appeared in explanation and defence of the National Insurance Act, and have been duly noticed in our columns. Some of these were obviously partisan from cover to cover, while others, accepting the Act with studied neutrality, set out to unravel its complicated provisions for the benefit of the public. These whitewashings and interpretations have, however, given small space to the real problems of "medical benefit," for their authors either failed to see, or chose not to see, that by its medical provisions a scheme of national health insurance must stand or fall. Of course, an immense amount of criticism of the medical provisions of the Act has appeared in our own columns and elsewhere in the medical and lay press during the past ten months, so that our readers are by this time familiar with the main arguments on which the medical profession relies for its objections to the Act in its present form. Nevertheless, there are many who will welcome a small volume, of which we have received advanced proofs, entitled "Can the Doctors Work the Insurance Act?"[1] They may agree with it all, they must agree with much of it, and they will have in their hands a compendium of the obvious objections which can be taken to the measure from a professional point of view.

The book is in essence a destructive criticism of the Act as it stands, disputing its present financial basis and controverting its spirit by supplying arguments in favour of payment for work done. It is intended to be a direct reply to the challenge of certain apologists of the Act who demanded information as to what is fair payment for medical services. The author declares that the profession will, and can, only work the Act upon the terms embodied in the "six cardinal points," to which he would add an essential corollary, "no *per capita* contracts whatever." He is in favour of national health insurance, provided always that the two interdependent conditions of adequate treatment for the patient and adequate payment for the medical men are guaranteed. The question he asks is not whether any medical men *will* work the Act as it stands, but "Can a doctor give adequate time and attention to his patient while earning a living for himself under the terms of the Act?" Mr. LOWRY naturally covers a good deal of ground which we have already gone over time after time, and many of his conclusions accord almost exactly with our own; but even so, he has a fresh way of putting familiar facts and well-worn arguments. He very wisely refrains from comment on the action taken by the leaders of the British Medical Association, or by their professional critics: these domestic matters he leaves altogether on one side, while throughout his vigorous pages he is careful to avoid unnecessary personalities.

He regards an income limit for those who would benefit under the Act as essential to the welfare of the profession. Only so long as the Act is limited to the struggling poor can the medical profession work it without irreparable injury to itself and to the public; he can see no necessity for extending the principle of compulsion in matters medical beyond the poor. He condemns the Act for imposing upon the medical man those very risks which the State itself has rejected, and he draws a sharp distinction between the club practice of the past and the State practice on a wholesale *per capita* system proposed by the framers of the Act. He abominates contract practice, and he maintains that such a system as that adopted for many years with success by the National Deposit Friendly Society would, if combined with an income limit, satisfy all the demands of the profession and guarantee adequate medical service without retarding the progress of scientific treatment. We do not intend to refer in further detail to Mr. LOWRY'S views. His style is rather controversial, and some of his figures and assumptions will scarcely escape challenge from those whom his irony touches; but on the whole he is on safe ground. His case, put briefly, is that the minimum demands of the medical profession are reasonable, and beneficent alike to profession and public; that these demands are not yet secured definitely; and that until they are so conceded the profession cannot work the Act in a manner consistent with its own honour or profit, or with due regard to the health of its patients. His volume supplies a closely reasoned answer to the oft-repeated question of the party politician, "Why should a profession which accepts 4*s.* with drugs reject 4*s.* 6*d.* without drugs?"

[1] Can the Doctors Work the Insurance Act? By E. W. Lowry, M.R.C.S. London: Watts and Co., 17, Johnson's-court, Fleet-street, E.C.

Surgery in the Middle Ages.

Mr. D'ARCY POWER has recently traced for us the evolution of the London surgeon[1] from the time of Master JOHN ARDERNE, "a gentleman at the most courtly and picturesque time of English history, when EDWARD III. was on the throne and the Order of the Garter had been recently established," down to Lord LISTER, who passed from among us but yesterday. The story of Master ARDERNE ("Master," because he was a master surgeon, entitled to wear the cap and gown of the guild or fraternity of surgeons of London, from which custom perhaps derives the English practice of styling all surgeons "Mr.," irrespective of degrees) is of great interest, for it shows us that even in mediæval times there were surgeons with a keen appreciation of what constitutes the basis of good surgery. Long prior to ARDERNE, indeed, in the thirteenth century, there were those who vigorously opposed the idea (prevalent even up to our own times) that pus in wounds was inevitable; who aimed at,

[1] The Evolution of the Surgeon in London. The Mid-sessional Address delivered at the Abernethian Society on Jan. 11th, 1912. St. Bartholomew's Hospital Journal, February, 1912.

and got, union by first intention; who practised drainage in suitable cases; and it is even stated induced anæsthesia by the inhalation of some volatile liquid—but here, it seems to us, we are greatly in the realms of fancy. ARDERNE himself unsparingly condemned the too prevalent practice of frequent dressing of wounds. Further, when others used caustics or ecraseurs, ARDERNE, who was by no means afraid of hæmorrhage, made clean incisions with a scalpel, stanching the bleeding with compresses, styptics, and the cautery. In those days of jousts and constant warfare, practice in the surgery of wounds must have been remarkably common, and involved, as Mr. POWER points out, not only good surgery but good nursing also. The nursing, he tells us, "was done by ladies, the wives, sisters, and sweethearts of the patients, who had been familiar from their youth upwards with the treatment of wounds, sword thrusts, and sprains, for the customs of the day gave ample opportunity of practising their skill, and all the romances of the time show them to have been excellent nurses." ARDERNE was a member of a knightly family of Saxon origin which was the first in England to adopt the Norman custom of a surname. He was born in 1307 and lived until nearly the end of the fourteenth century. He was educated at Montpellier University, and practised surgery for a while in France, but from 1349 until 1370 he practised at Newark-on-Trent. Finally, however, he yielded to the lure that even many modern provincial surgeons and physicians find so resistless, and removed to London.

Mr. POWER contents himself mainly with a picture of the ethical characteristics of ARDERNE'S times, and lays stress on the fact that ARDERNE was able to demand and obtain fees which, making due allowance for the purchasing power of money in those days as compared with our own, would make many a modern surgeon envious. In short, in the fourteenth century "the surgeon was able to hold his own with the best in the most chivalrous time and at the most courteous and extravagant court in Europe." According to another writer[2] who has made the field of mediæval medicine the subject of his own particular study, ARDERNE also used to keep case records, and was as proud of his statistics as any modern surgeon. Mr. POWER draws an outline of the attempt made in 1423 to combine the surgeons and physicians of London into one corporate body. He gives a brief account of WILLIAM CLOWES (1540–1604), a surgeon first in the army, then in the navy, who settled in London in 1569, and was appointed surgeon to St. Bartholomew's Hospital in 1575. But the wars again claimed him, and he served in the Low Countries in 1583 and in 1588 in the English fleet against the Spanish Armada. Mr. POWER quotes Dr. NORMAN MOORE'S estimate of CLOWES'S writings, that "they are the very best surgical writings of the Elizabethan age." He next refers to JOHN WOODALL (1569–1643), who inferred the efficacy of lime juice in scurvy from the happy accident of two ships' crews, one of which was smitten with scurvy, the other free from it, the conditions differing only in the fact that one had lime juice and the other had not. WOODALL published in 1617 the "Surgion's Mate," and in 1628 the "Viaticum, being the Pathway to the Surgion's Chest," text-books of surgery which long formed part of the library of every surgeon and surgeon's mate or assistant on sea or land. RICHARD WISEMAN (1621?–1676), like WOODALL, helped in the raising of surgery from a handicraft into a profession, and engaged in battle royal with quacks. Mr. POWER tells us that WISEMAN "differs from all his predecessors in his power of arguing from the particular case under discussion to a generalisation upon the principle involved." Into the stories of the later surgeons of whom Mr. POWER writes—WILLIAM CHESELDEN (1688–1752), PERCIVAL POTT (1714–1788), JOHN HUNTER (1728–1793), JOHN ABERNETHY (1764–1831), and greatest of all him whom we have so recently lost full of years and honours—Lord LISTER—we have not space to follow Mr. POWER, and, moreover, information concerning them is more generalised and more easily accessible. It would be well to study more closely the medical worthies of the Middle Ages, as far as possible in their own works and in the literature of their own times, for with their passing, it is daily becoming more and more likely, was engulfed a whole continent of potential knowledge.

[2] J. J. Walsh, M.D., Makers of Old Time Medicine.

The Nomenclature of Diseases.

SPEAKING precisely, there is no such thing as a disease. This truth has once more been forcibly enunciated by Sir CLIFFORD ALLBUTT, in an article on the Importance of Precision in Nomenclature,[1] in the following terms: "Diseases, then, are not things or 'entities,' but general concepts in our minds of various disorderly ways of function, swerving now this way, now that, in infinite variety, though on a larger view observing certain main lines of divergence and advance; so that for the convenience of thought, which is unable to grapple with things as wholes, we are enabled and are wont, not without a certain arbitrariness, to separate them into classes, and to form, for each class, a type, or mental ideal, ideals rarely realised in full, even in 'typical cases,' but which are standards to work by." The so-called names of diseases are, then, mere labels given to "a certain assemblage and succession of symptoms, normal and abnormal, recurring with fair uniformity." But in order to know what we are talking about in medicine it is clear that "we must use the names of these series respectively with the closest precision that conditions permit, although with no less clear a recognition of the arbitrary and provisional nature of our classification."

In consequence of a realisation of this truth efforts have been made from time to time to systematise the nomenclature of disease by drawing up tables of diseases. For this country the Royal College of Physicians of London has long undertaken this task. But in these days especially a progressive tendency towards internationalism is manifest, and in nothing more than in the medical sciences, for the essentials of man's structural organisation and functional activity are for the most part *humani generis totius*, and even the most marked racial or national characteristics affect little more than the surface. The need has thus made itself felt for a wider comparison of data than can be attained within the geographical boundaries of any one nation, however extensive,

[1] Universal Medical Record, vol. i., No. 1, January, 1912.

and the first essential for this international comparison is an international nomenclature. Hence arose the International List of Causes of Death, which, under the distinguished editorship of Dr. JACQUES BERTILLON, underwent its second decennial revision at Paris, July 1st to 3rd, 1909. The object of this List is to group together under the fewest possible headings the greatest possible number of more or less related causes of death. The necessity for such grouping lies in the fact that the number of possibly fatal diseases is so great that separate returns of each would be out of the question in tables showing the relation of cause of death to sex, age, locality, occupation, and other similar groupings. The numerical or hygienic importance of individual diseases, it is true, may require such tables to be made out for them individually in a few instances—e.g., bronchitis or plague—but for the most part a classification under group headings is essential.

The International List having been adopted as the basis of future registration in England and Wales, a manual[2] thereof has been recently published by the Registrar-General's office, which reflects great credit on Dr. T. H. C. STEVENSON, superintendent of statistics, by whom it has been prepared. It is intended to provide means for the compilation of mortality tables on an identical plan throughout the entire country, so that these may in future be truly comparable with each other, and also to supply the reader of the tables prepared by the Registrar-General with an opportunity of ascertaining as far as possible the precise significance of every item contained in them. With the assistance of Dr. ARTHUR NEWSHOLME an abbreviated list, while conforming to the International List, has been made identical with Skeleton Table III. issued by the Local Government Board to medical officers of health for their guidance in making their returns, and this coöperation, together with the adoption by the Registrar-General of the "Sanitary Area" as the geographical basis of tabulation, secures uniformity between the Registrar-General's statistics and the reports of the various medical officers of health. Frequent consultations with Dr. J. C. DUNLOP and Dr. NINIAN FALKINER, the statistical superintendents respectively of Scotland and Ireland, both of whom have approved the adoption of the International List, have also tended to further uniformity of the methods to be used throughout the United Kingdom. Moreover, Dr. CRESSY L. WILBUR, the distinguished chief statistician for vital statistics of the United States Census Bureau, in 1902 brought out for that bureau an American Manual, similar in scope to the one now under consideration; and the proof sheets of a new edition thereof, rendered necessary by the revision of the International List, were kindly placed at the disposal of Dr. STEVENSON. By this means a closer approximation in the practice of the two great English-speaking countries has been effected than would have been possible by the separate adhesion of both to the international system. It is to be regretted that circumstances prevented the adoption of a similar course with regard to Canada, Australia, and New Zealand; but as these countries adopted the International List before this country, the present step tends to uniformity.

A serious objection to the adoption of the International List lay in the disturbance of the continuity of English records necessarily attendant on the alteration of their basis of compilation; but this seems to have been successfully surmounted by a cross reference table showing the headings or titles used up to 1910 with numerical references to the corresponding headings or titles in the International List. Several other points of importance are dwelt on in the explanatory introduction of the manual—the rules in use in the General Register Office, England, for the selection of one from two or more jointly stated causes of death; a list of 200 indefinite or undesirable terms; an explanation of the terms "primary" and "secondary" causes of death as used in the death certificate, in which the former confusing definition of "primary" as first in order of appearance has been replaced by the more logical one of chief in importance; and the mode of registration of "transferable deaths"—i.e., deaths of persons who, having a fixed or usual residence in England or Wales, die in a district other than that in which they resided. In the adoption by the United Kingdom of the international system of mortality statistics an obvious advantage accrues through facility of comparison of English mortality with that of other countries; while Dr. STEVENSON by his adaptation of that system to this country has effected a great stride towards complete uniformity of registration throughout the United Kingdom and, indeed, all the chief English-speaking communities. It remains to be seen whether this undoubtedly great advantage and other incidental ones will be counterbalanced by the disadvantage adduced by Sir JOHN W. MOORE, and referred to in the special article on the manual in our issue of Feb. 24th (p. 528)—viz., that the transference to local affections of, for example, cerebro-spinal fever, pneumonia, epidemic diarrhœa, and puerperal fever from their rightful position under the heading of epidemic diseases places a formidable block in the path of sanitary reformers and medical officers of health.

[2] Manual of the International List of Causes of Death as Adapted for Use in England and Wales. Based on the second decennial revision by the International Commission, Paris, 1909. London: Published by His Majesty's Stationery Office. To be purchased either directly or through any bookseller from Wyman and Sons, Limited, Fetter-lane, E.C.; or Oliver and Boyd, Tweeddale-court, Edinburgh; or E. Ponsonby, Limited, 116, Grafton-street, Dublin. 1912. Pp. 128. Price 1s.

Annotations.

"Ne quid nimis."

THE STRIKE BILL.

THE measure introduced in the House of Commons on Tuesday by the Prime Minister is tentative. It is an emergency remedy, comparable (say) to opening an abscess, where the abscess is but the particular indication of some general condition, though the one that is producing the greatest disability in the patient. The keenest faculties of diagnosis are called for in those who have charge of our body politic, and the country will expect in the consultant practitioners to whom the therapeutic course is entrusted the exhaustive care and absence of party or personal prejudice which can alone make the methods of treatment trustworthy. But appearances are against the discussion of the measure with this calmness, and the existing symptoms are urgent.

THE ATTEMPT ON KING VICTOR EMANUEL'S LIFE.

THE civilised world, without a dissentient voice, has proclaimed its horror at the attempted assassination of the King of Italy and its congratulation with His Majesty and His Majesty's subjects on his providential escape. The attempt itself has nothing to distinguish it from others of the kind, all too familiar as those have been to the former generation and to the present. A degenerate creature, one of the type in whom microcephalism is a concomitant, if not, indeed, a condition precedent, of megalomania, has, it would appear, been told off by an anarchist camarilla to "save society" and to earn the martyr's crown by assassinating the head of the State; and he plays his part accordingly, with the due observance of traditional detail. He selects the place and the time of his attempt with an eye to that publicity which is supposed to make it most impressive, and he fires a succession of shots at his august victim in the full light of day and in the city's chief thoroughfare. He fails in his purpose, wounding only a member of the Royal escort, and he incurs the immediate attentions of the indignant crowd, whose wish to lynch him he well knows will be frustrated by the very authority against which he is a declared rebel. He is further gratified by the consciousness that, for the day, he is the one theme of conversation at home and abroad, and he awaits his trial with the serenity of one who knows that on that occasion the interest in him will be revived, till he receives the penalty which at worst will leave him the life he tried to take from another. Have we not here, in Antonio d'Alba, a replica of the Passanantes, the Casserios, the Angiolillis, the Luchenis, the Brescis, who have maintained for Italy in regicide the sinister priority she has long held in homicide? How she is to break that unenviable record may well employ the time and the thought of her best public men, many of whom see in it not only the outcome of idiosyncrasy, ethnological and national, but of tradition in the family and in the State. There is no doubt, as Italy's great criminologist, Baron Garofalo, has pointed out, that vendetta has a place in social life peculiar to the Latin races in general and to the Italian in particular; that it has acquired something of the force of a pious obligation, transmitted from father to son, an obligation fostered, if not justified, by absolute distrust in the integrity of the law, and stimulated by the unconstitutional promoters of Italy's "Risorgimento." Of this last concurrent cause of vendetta as an institution, it is freely admitted that the gospel of the "stiletto morale" (the moral dagger) as preached by the burning eloquence of Mazzini, has been a powerful coefficient, all the more powerful from the lofty *morale* of the man, from his patriotic ideal, from his whole life—sacrificing as he did, according to Carlyle, one of the grandest literary careers of the nineteenth century to the work of underhand, sometimes underground, plotting against the prevailing order. In his famous letter to a brother revolutionist, Daniel Manin, he glorified the knife of Timoleon, the dagger of Brutus, the arrow of Tell, the stone of Balilla, and the poniard of Palafox, in language all too effective with his compatriots, uninstructed and even illiterate as the majority of these were, investing their impulse towards lethal methods with a moral sanction that seemed to justify them on the most slender provocation. In the prisons set apart for homicides undergoing life sentences the inmates are often found to have their bodies, generally their forearms, tattooed with mottoes taken from the revolutionary vocabulary, mottoes which ring the changes on the rubric under which the anarchist societies to which the said inmates belonged march in procession on gala days: "Né Dio, né Padrone" (neither God nor Master). Such is the moral atmosphere from under which an Antonio d'Alba has emerged like all his counterparts, aye, and will continue to emerge till Italy's appalling percentage of "analfabeti" is reduced from thousands to units. In furthering the movement and the methods antagonistic to this "analfabetismo" no man has taken a more enlightened, a more devoted, a more self-sacrificing part than the true disciple of Cavour and scion of the House of Savoy who has just escaped the anarchist's vendetta, and the spontaneous, the universal outburst of indignation at the attempt and of joy at its failure attests the soundness of the national sentiment if undepraved by ignorance or unperverted by vindictive agitation. "Ha tirato contro l'Italia" (he fired against Italy) was the exclammation of her great poet, Giovanni Pascoli, on hearing of d'Alba's deed. Let us hope that Italy, from the Alps to Etna, will so respond to that sentiment as to renew with redoubled effort her educative propaganda so often postponed to that of political interests in which those of the people are forgotten, if not lost.

FEEBLE-MINDEDNESS AND THE MEASUREMENT OF THE INTELLIGENCE BY THE METHOD OF BINET AND SIMON.

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Dr. Sullivan himself states, without some accepted convention of this description the classification of a child as feeble-minded or otherwise will still depend to a certain extent on the whim of the examining physician. Dr. Sullivan has applied the method with interesting and suggestive results to the juvenile offender. An excellent opportunity for its application might be found in the case of young epileptics, who are often mischievous, restless, inattentive, spiteful, cruel. But are they really feeble-minded? The criteria of M. Binet and M. Simon might well be utilised in this connexion. There is, also, the very large class of backward children, using the term in a general sense, who do not present any sign of physical disease; anxiety for their welfare and interest in their development lead the parents to seek medical opinion on the possibility of these children being able to earn their living, and the physician would be in a better position to formulate a reasonably accurate prognosis if he had the results of systematised mental tests at hand. Of course, the chief difficulty, as Dr. Sullivan is fully aware, is that the individuals to whom these tests may be applicable are often characterised not so much by mental inferiority as mental inequality. Intelligence involves many factors. Many children possess faculties abnormally developed with others that are in abeyance. It is rare to find equality in maldevelopment on the part of all the factors that combine [illegible] a child's mental "make-up." It is notoriously otherwise sometimes memory is extraordinarily acute. There [illegible] patient in one of the county asylums who could [illegible] the occasions on which any given member [illegible] had played tennis. We have heard of a [illegible] whose memory for dates was prodigious, [illegible] jects he was a typical *arriéré*. Dr. John [illegible] Inspector of Schools for Scotland, has [illegible] volume of reminiscences the case of a [illegible] on what day of the week any day of the [illegible] several years preceding, fell, by some mental [illegible] we have at present no clear conception. [illegible] and are no doubt exceptional, but the fact [illegible] the physician will, as a rule, have to deal with [illegible] equally developed, not uniformly inferior. Now [illegible] that in Binet and Simon's scale not a few of the [illegible] are pure tests of memory—e.g., in the case of the 15 year children two, if not three, are pure memory tests, out of five—and it may be questioned whether some modification in this respect may not be desirable. In this connexion, however, it is proper to note that Dr. Sullivan considers the scale should not be held to be final, and experience will soon remedy any defects which it may possess. The main argument is that some convention is necessary, and the plea which Dr. Sullivan has advanced for the adoption of the principle we cordially endorse.

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ALTHOUGH shyness, like egotism, may be said to arise from a pathological degree of self-consciousness, the presence of this elusive and illogical failing in an otherwise normal individual is by no means easy to explain; and if we are to judge by the way in which they ignore the subject, the psychologists find no less difficulty in its definition and classification. They are content, for the most part, to include it under the headings of "shame" and "modesty" in their analysis of the emotions, but this is by no means satisfactory. Shyness is, psychologically, much more nearly related to fear than to shame. That it does not necessarily proceed from even a sense of moral, mental, or physical deficiency, still less from the actual existence of these, is well known, and it is this fact that makes the curious predilection of the malady for certain individuals one of its most aggravating features. Speaking broadly, we may say that shyness consists essentially in a state of morbid self-consciousness of one's personal characteristics, whether physical or mental, in relation to the opinions of others. There is a certain amount of evidence to show that shyness is hereditary; but however this may be, it is largely a matter of temperament in individuals and finds a fruitful ally in a too active imagination. It is as protean as influenza in the forms in which it betrays its presence, and may exhibit itself in a thousand little gaucheries which in extreme cases may render the life of its unhappy possessor a burden to him. "Sins may be forgiven," said Nathaniel Hawthorne—himself a victim to shyness—"but shyness has no forgiveness in heaven or earth." Not infrequently the malady takes the form of excessive rudeness, with the result, it may be, that the most gentle and kind of characters is shunned at all costs as a boor. It may literally paralyse movement and speech. There has been recorded the case of an excessively shy man who, in reply to the toast of his health at a dinner given in his honour, went over his carefully prepared speech in pantomimic gesture only. This dread affliction is no respecter of persons. Charles Matthews, Garrick, and Byron were instances of men who suffered from shyness in their relations to the social life of their time, and there is a well-known author-dramatist of to-day who, it is understood, suffers tortures from the disease. Sir Isaac Newton was morbidly shy, and had an objection to the publication of his discoveries lest it should lead to an increase in the number of his acquaintances. The late Prince Consort was terribly shy. It has been remarked, and with some truth, that this extraordinary affliction is largely confined to the Teutonic races, and Georges Sand humorously attributed the Englishman's stiffness and awkwardness, especially when travelling abroad, to what she called the

THE ATTEMPT ON KING VICTOR EMANUEL'S LIFE.

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"fluide Britannique," which she averred he carried about with him in self protection. As a national characteristic, however, this abnormal aloofness and shyness has its compensations. It throws a man more upon his own resources; society ceases to be a necessity to him, and this may have been one of the reasons of the Anglo-Saxon's supremacy as a pioneer in the untrodden regions of the earth. Those with a more intense social instinct have been less successful colonisers. Shyness has its compensations as a racial characteristic.

THE PEST-HOLE OF THE PACIFIC.

THE term "pest-hole of the Pacific" is applied by some American writers to Guayaquil, the main seaport of Ecuador, situated on the western coast of South America, not much more than 800 miles by sea from the Panama Canal. Another name applied to Guayaquil in recent years is "the clearing-house of the western hemisphere for cholera, yellow fever, small-pox, and bubonic plague"; and by yet others it is known as "the plague-spot of the west coast of South America." From all accounts this evil reputation is not altogether undeserved. Yellow fever, for example, has for a long time been endemic, giving rise now and again to virulent epidemics. During the last three years, according to consular reports, more than 1000 persons have been attacked in the town by this disease. Plague also for some years has been constantly appearing, and in the period 1909–11 no fewer than 2424 attacks have come under official observation. Small-pox, too, is of frequent occurrence, and severe outbreaks occur at comparatively short intervals. Though Guayaquil possesses one of the finest harbours to be met with along the whole coast of the Pacific, its sanitary circumstances leave a great deal to be desired. A large section of the poorer population are idle and apathetic, their habits are filthy, and their squalid homes are infested by rats, fleas, and other vermin, while in the neglected spaces around these dwellings the yellow fever mosquito finds many favourable breeding places in which it multiplies exceedingly. In anticipation of the opening of the Isthmian Canal at no very distant date, public opinion in the United States is becoming somewhat uneasy as to the outlook, and this has found expression of late in the lay and medical press. In THE LANCET of Feb. 10th we discussed the possibility of the Panama Canal facilitating the diffusion of exotic disease, particularly yellow fever and plague. Our contemporary, the *Journal of the American Medical Association*, in its issue of Feb. 17th, draws attention to the danger that may be expected to arise for the United States from certain South American States, more especially Ecuador, when the new commercial water-way is opened for traffic. The article is headed "What is Sauce for the Ecuador Goose is Sauce for the American Eagle," and it is pointed out that as all civilised nations now forbid the use of dum-dum bullets, submarine mines in peaceful harbours, or floating torpedoes in the track of commerce, therefore in the same way the export of yellow fever, cholera-polluted drinking-water, or disease-transmitting insects such as might be carried by ship from one port to another should similarly be forbidden by all advanced nations. On the other hand, if the right of the United States Government to intervene with the view of compelling Ecuador to place the sanitation and administration of Guayaquil on a proper footing is admitted, there would be nothing to prevent the Italian Government from insisting that the city of Pittsburg, for example, should be forced to provide uncontaminated drinking-water for the many Italian workmen employed in the steel mills of that city; or to prevent the Russian Government from putting pressure on the United States to "clean up" the tuberculosis-breeding tenements of Greater New York, in which every year thousands of Russians cough away their lives. Such procedure would be in line with the march of civilisation, but attended with many difficulties. If the United States forced Ecuador to "clean up" its one main seaport, ought not the former first of all to put its own house in order by "cleaning up" some of the backward cities in its own territory, where each year thousands of deaths occur from preventable causes? In the *New York Medical Record* of Feb. 17th attention is also directed to the subject of the danger arising from Guayaquil's unhealthy condition. Referring to a despatch which stated that yellow fever was increasing and threatening to become severely epidemic in Guayaquil, it is mentioned that General Plaza, who quelled the recent revolution in Ecuador, had been attacked by the disease. Our readers may remember that not long ago one of the assistant surgeons of the United States Public Health and Marine Hospital Service, who was attached to the Consulate-General at Guayaquil, contracted yellow fever, from which he died in a few days. The public departments of the United States concerned with the subject, as also the officials of the Panama Canal Zone, have offered their aid to the Government of Ecuador to carry out the necessary sanitary reforms at Guayaquil, but with what result we do not know. It is, perhaps, a favourable indication of advancing public opinion that Ecuador was represented at the International Sanitary Conference which assembled last November in Paris. The delegates should be in no doubt as to what is needed to satisfy international requirements, and we have no doubt that having this knowledge in their possession any courteous and diplomatic representations made by the Government of the United States would meet with a satisfactory answer. Before long we may see the unenviable notoriety of Guayaquil removed, when it will be no longer appropriate to apply to Guayaquil the opprobrious epithet of "the pest-hole of the Pacific," but Ecuador, judging from recent occurrences, is plunged in barbarism, and not much can be hoped for from the initiative of its leading men.

PRESENTATIONS TO PROFESSOR P. W. LATHAM.

THE occasion of the departure from Cambridge of Dr. P. W. Latham, who for 20 years held the chair of the Downing Professorship of Medicine, has been used by his many friends to testify their warm esteem of himself and Mrs. Latham personally, as well as their sense of the value of his public work. A meeting was held in the Combination Room of Gonville and Caius College on Thursday, March 14th, for the purpose of making a presentation to Professor Latham. The presentation, consisting of a pair of silver entrée dishes and a parchment scroll containing the subscribers' names, had been subscribed for by the medical men of Cambridge and district and other medical friends. A large meeting was presided over by Sir T. Clifford Allbutt, who in a very interesting speech spoke of Professor Latham's distinguished career since the time they were undergraduates together at Caius. Mr. N. Beverley, of Norwich, and Professor Sims Woodhead also spoke to the value of Professor Latham's work in a professional and scientific regard. On Friday evening, March 15th, at Trinity Hall, presentations were made to Professor Latham and his wife. To Mrs. Latham was presented a diamond pendant brooch, and to Professor Latham a piece of plate suitably inscribed. The Master of Trinity Hall, Mr. E. A. Beck, presided over the meeting, and the Master of Peterhouse made the presentation. In so doing he spoke of the high esteem in which Professor Latham was held as physician, of his brilliant career as a student, of his great work for Addenbrooke's Hospital, and of his services to the University, particularly as Downing Professor of Medicine for 20 years. Professor Latham will carry with him into his well-earned retirement the good wishes not only of a large

circle of private and professional friends, but of several generations of students at the School of Medicine in Cambridge, which during the term of his professoriate made such remarkable strides forward.

SUNSHINE AND RAINFALL FOR 1911.

	Sunshine.		Rainfall.		
—	Number of hours.	Difference from average.	Total fall.	Difference from average.	Number of days with rain.
		Hours.	Inches.	Inches.	*
Scarborough	1538	—	26·6	− 0·7	197
Whitby	1637	—	24·9	− 0·8	158
Skegness	1832	—	25·7	—	185
Cromer	1761	—	19·3	—	233
Yarmouth	1795	—	20·4	− 4·9	144
Lowestoft	1936	—	21·6	− 2·1	165
Felixstowe	2146	—	21·5	—	171
Clacton	1986	—	18·6	—	142
Southend-on-Sea	1901	—	19·1	− 2·2	144
Margate	1856	+316	23·6	+ 0·4	152
Ramsgate	2021	—	?	—	?
Broadstairs	2067	—	24·7	—	150
Dover	2090	—	27·3	—	166
Folkestone	2049	—	30·5	+ 2·5	156
Hastings	2147	+264	29·6	+ 0·5	164
Eastbourne	2158	+419	35·5	+ 4·6	149
Brighton	2128	+397	33·5	+ 2·9	143
Worthing	2115	—	31·7	+ 4·7	149
Southampton	1914	+249	30·4	− 0·5	154
Bournemouth	2142	—	30·4	—	160
Totland Bay	2115	—	27·4	− 0·7	152
Sandown	2067	—	32·7	—	163
Ventnor	2070	+347	23·3	− 0·3	165
Weymouth	2090	—	24·8	—	151
Torquay	2112	+381	29·6	− 4·2	161
Plymouth	1970	+320	37·6	+ 1·7	176
Falmouth	2064	+288	40·5	− 4·9	178
Jersey	2124	+197	31·7	− 2·5	189
Guernsey	2124	+218	37·1	− 0·5	193
Penzance	1933	—	40·4	—	202
Scilly	1831	+ 20	34·2	+ 0·6	186
Newquay	2012	+325	30·4	− 4·6	177
Cardiff	1868	—	37·6	− 5·1	187
Swansea	1751	—	45·2	—	164
Pembroke	1842	+200	38·6	+ 3·5	201
Aberystwyth	1797	—	38·0	—	180
Llandudno	1817	+361	30·5	− 0·3	168
Rhyl	1926	—	20·6	− 5·4	152
Hoylake	1764	—	24·0	—	155
Southport	1823	+357	30·4	− 2·5	163
Blackpool	1843	+434	31·1	− 2·7	180
Carnforth	1595	—	40·1	—	182
Douglas, Isle of Man	1873	+273	37·6	− 4·7	184
Harrogate	1533	—	27·9	− 1·6	181
Buxton	1520	—	40·2	−10·4	177
Llangammarch Wells	1492	—	50·7	—	213
Bath	1911	—	25·7	− 4·8	146
Cheltenham	1746	—	21·7	− 5·9	145
Tunbridge Wells	2030	+442	35·2	+ 5·6	161
Newcastle-on-Tyne	1189	+123	24·5	− 2·9	204
York	1411	+135	25·1	− 0·2	173
Hull	1220	—	24·4	− 1·4	193
Sheffield	1544	—	25·4	− 7·2	169
Nottingham	1532	—	19·4	− 5·4	177
Birmingham	1289	—	20·4	− 7·0	162
Manchester (City)	1284	—	31·1	− 4·1	179
Liverpool (Bidston)	1767	—	25·3	− 3·5	170
Marlborough	1670	+274	26·1	− 5·8	165
Oxford	1746	+248	20·9	− 4·1	163
Cambridge	1841	+281	19·0	− 3·7	150
Tottenham	1718	—	23·9	—	135
Hampstead	1756	—	24·0	—	164
Camden-square	1543	—	24·8	− 0·4	155
Westminster	1542	+448	22·3	− 2·1	145
Greenwich	1789	+263	23·7	− 0·4	158
Kew Observatory	1720	+253	23·1	− 0·9	158
Bunhill-row (City)	1444	+304	?	—	?
Strathpeffer	1253	+65	26·3	− 5·9	215
Fort Augustus	1046	+157	44·8	+ 0·2	235
Oban	1519	—	58·1	—	203
Glasgow	1215	+120	36·3	− 2·4	202
Aberdeen	1518	+117	27·5	− 3·2	206
Marchmont	1463	+135	31·7	− 2·7	181
Dublin (Phœnix Park)	1577	+47	23·3	− 5·2	191
Birr	1564	+214	31·0	− 2·0	200
Armagh	1510	+220	27·6	− 4·3	192
Markree Castle	1522	+265	42·3	+ 0·3	208
Valencia	1671	+214	55·6	− 0·9	220

* A day with rain is one on which at least 0·01 in. was measured.

The large excess of sunshine which was one of the chief features of a remarkable year was for the most part due to the unusually fine summer, but over a considerable portion of the kingdom nearly every month added something to the plus value. At several of the southern resorts the aggregate number of hours was more than 2100, the highest figures being 2142 hours at Bournemouth, 2146 at Felixstowe, 2147 at Hastings, and 2158 at Eastbourne. In the north-west, Blackpool recorded 434 hours more than the average, a greater excess than at Eastbourne. At Tunbridge Wells the excess amounted to 442 hours, and at Westminster as much as 448 hours. Westminster was, relatively to its average, the most sunny spot in the whole kingdom. It will be seen that the City of London received many more hours of sunshine than Birmingham, Manchester, Newcastle-on-Tyne, and Glasgow, and rather more than York; it was, however, less sunny than Nottingham and Sheffield. Fort Augustus, owing mainly to the adjacent mountains shading the valley, was the least sunny spot, while the place where smoke and dust formed the chief obstacle to the sun's rays was Newcastle. The total rainfall for the year was not everywhere less than the average, the great deficiency of the first nine months having been made up by the heavy and frequent rains of the last three. This was especially the case in the south-east of England, where Tunbridge Wells finished with the large excess of 5·6 in. The greatest deficiency was in the Midlands and some parts of East Anglia. The metropolis as a whole received rather less rain than during an average year, and a portion of it, Tottenham, had rain on fewer days than any other part of the kingdom. Although the total fall at Tottenham and Hampstead was practically identical, the latter had a measurable quantity on 29 more days than the former. Next to Tottenham the fewest rain days occurred at Clacton and Brighton, but in many other places over the southern half of England the figure was nearly as low. All the above information has been compiled from a summary of the year's weather published by the Meteorological Office.

THE POISONS SCHEDULE.

IN the exercise of its powers under the Pharmacy Acts the Council of the Pharmaceutical Society has declared in a resolution, passed at its March meeting, that certain alterations ought to be made in the Poisons Schedule—namely (*a*) that sulphonal be removed from Part II. of the Schedule to the Poisons and Pharmacy Act, 1908, and that "sulphonal, its derivatives, and the poisonous derivatives of mercaptol" be substituted therefor, and (*b*) that "diethyl-barbituric acid and other derivatives of barbituric acid, and all poisonous ureides and their derivatives," ought to be deemed poisonous within the meaning of the Pharmacy Acts, and ought to be added to Part II. of the Schedule to the Poisons and Pharmacy Act, 1908. The resolution has been submitted for the approval of the Privy Council, and if such approval be given the resolution and approval will be advertised in the *London Gazette*, and on the expiration of one month from such advertisement the articles named will be deemed to be poisons within the meaning of the Pharmacy Acts. There have been occasions on which the Privy Council has not given its approval of resolutions declaring that certain substances ought to be deemed poisons, but apparently there is nothing to lead to the supposition that its approval will be withheld on this occasion. The reasons which have decided the Privy Council to refuse to assent to the scheduling of certain substances in the past cannot be applied in the case of veronal and its derivatives, for the extent to which the trade interests in these compounds is likely to suffer cannot be considerable when compared with the greater degree of safety which will be ensured by surrounding the sale of these articles with precautionary restrictions of an elementary character. If and when the compounds indicated in the resolution are included in the Poisons Schedule, their sale by retail will be

confined to registered pharmacists, who will be required to label the packages in which they are sold with the word "poison" and the name and address of the seller. With the exception of sulphonal, any of the drugs in question may be sold, at the present time, without any restriction whatever, and in the absence of the poison label there is nothing to impress upon the mind of the purchaser that he is handling dangerous substances. In some countries it is illegal for any person to sell these and many other compounds except to persons for whom they have been prescribed by a medical practitioner, and if such a regulation could be made and enforced in our own country so much the better would it be for the public; unfortunately, however, our pharmacy laws do not provide for any restrictions of this kind, and in the meantime we must be satisfied with such protection as is afforded by the poison label and the discretion of the pharmacist. The best known compounds which will be brought into the Schedule, if the consent of the Privy Council is given to the resolution, are trional and tetronal (as poisonous derivatives of mercaptol), and veronal, malouren, malonal, and hypnogen, but the proposed "additions" are so worded as to include any like substances of the same series which may subsequently be introduced into materia medica.

JOHN BELLERS.

IT is well known that Lister belonged by birth to the Society of Friends, and this religious community has added other less splendid names to the golden book of medicine and medical reform. One of the earliest is that of John Bellers, a Gloucestershire squire and Quaker philanthropist, whose "Essay towards the Improvement of Physick, in Twelve Proposals," published in 1714, was prophetic as well as practical. It is one of some 18 works, each of which is remarkable for originality and benevolence of outlook. Taking the 12 proposals seriatim, we are at once faced by an adumbration of the hospital system of the present. Bellers, indeed, was one of the first to propose the building of many hospitals in London and elsewhere. Those in or near London were to be for the benefit of the poor, and were, if possible, to be devoted to different "capital distempers." Two were certainly to be devoted to the blind and to incurables. Registers of cases were to be kept and human dissection was to be practised. The incurables were even to furnish live material for experimentation. It is quaintly proposed that "any person may have the liberty to give medicines to such incurable patients as are willing to follow their prescriptions. And such as make any cure, should be rewarded by the State, if the patient is not able to do it. And after many repeated cures of such patients, a gratuity should be given by the Government to the owner of such medicines to make a public discovery of them. And if he desires it, to be placed as a physitian in one of the hospitals where his medicine is proper." Thus the loss of some good medicines would be prevented. It was further proposed that a public laboratory and "physical observatory" should be provided to prepare all medicines used in physic and to conduct researches for the discovery of new remedies. Bellers's "Seventh Proposal" is aptly prophetic. It is proposed that "in every Hundred of a County, and Parish of a City, there be appointed one Doctor and Chirurgeon (or more, if needful) to take care of the sick poor in them; who should visit every parish once a week, at least. And they to be paid by the overseers of the poor: and such whose illness may be chronical, especially if declared to be incurable, they should be sent to the most suitable hospital." There was to be a State control of drugs which would make against quackery. Thus, it was proposed that all "published medicines" were to be examined "with the greatest candor and exactness that possible may be." Public notice of a good medicine was to be given "that the owner may be encouraged," and bad drugs were to be publicly notified as such. Other proposals of much interest are in favour of the endowment of research by various bodies and in various forms. Finally, it is proposed that the London College of Physicians and Company of Surgeons act as practical advisory bodies to practitioners, at that time very ignorant, and that every session a Committee of the Houses of Parliament be reported to by these bodies on the state of medicine. John Bellers was not only before his own time but before our time.

THE CHEMISTRY OF THE BOOT.

THE use of materials as innocent as can possibly be is a reasonable requirement in regard to the clothes we wear, since, of course, they are not merely decorative but are essential to the well-being and comfort of the body. The boot, in particular, is trusted to protect a part of the body peculiarly sensitive to damp and cold, and quality in boots is very desirable in the interests of the general health. Yet probably there are fewer articles showing wider variations of quality than leather. Good leather is a boon, but bad leather a snare. It is, therefore, somewhat disturbing to find that a whole laboratory of chemicals may occur in the boot. Not a few people have found after a hard day's work or exercise that their socks are stained a deep yellow derived from the chromates used, amongst other things, to give a rich tone to the leather. Chromates are poisonous salts. There may be other mineral substances present which are not so easily disclosed in a domestic way, but which readily appear on analysis. Thus may be found salts of lead, tin, aluminium, iron, and even the glucose which is used to assist in the preparation of the leather from the hide, but which, perhaps intentionally, has escaped elimination. It is reasonable to suppose that all these things are used for a specific purpose, but we may be sure that good sound material does not require the presence of such foreign substances. Leather made to look good by tinkering cannot fulfil so effectively the high hygienic purpose of the genuine unadulterated article. Brown paper is an innocent article enough, but it discounts terribly the best properties of the sole of the boot, which can only be satisfactorily waterproof and protective against cold when it consists of good pure leather. The subject is one which might attract more attention at the hands of our hygienic authorities than it appears so far to have done.

EPIGASTRIC HERNIA A CAUSE OF CHRONIC DIARRHŒA.

WITHIN the past few years a good deal has been written and published in the medical journals relating to epigastric herniæ, "small protrusions, usually not larger than a walnut, situated in the linea alba between the umbilicus and the xiphoid cartilage," in the words of Dr. Farrar Cobb, of Boston, Massachusetts, writing in the *Annals of Surgery* for March. They are commoner in males than females, and usually contain omentum, less often transverse colon. Any symptoms that are present are apparently due to adhesions between the hernial sac and the parietal peritoneum or neighbouring viscera; they are usually gastric in character. Dr. Cobb, however, reports a case in which the symptoms were intestinal, and says he was unable to find any other such record in medical literature. His patient was a tanner, 69 years old, whose chief symptom was diarrhœa of seven months' duration. From six to 14 loose watery motions were discharged daily, almost without remission, during this period. Blood had not been passed. His weight had diminished by

nearly 40 pounds. He had had six months of hospital treatment, both in the wards and in the out-patient department, and taken all kinds of drugs, and submitted himself to every conceivable dietary, but nothing had effected any real improvement. Physical examination had discovered no cause for the diarrhœa until Dr. Cobb noted the presence of an irreducible epigastric hernia. In default of any alternative, this was regarded as a possible cause of the symptoms and an operation accordingly decided upon. The contents of the sac proved to be omentum firmly adherent to the peritoneum of the abdominal wall as well as to that of the sac itself, and fastening the transverse colon to the anterior abdominal wall. The sac was extirpated and the adhesions divided so as to set the colon free. The patient recovered satisfactorily from the operation and has had no more diarrhœa, so that it seems reasonable to ascribe the whole trouble to irritation of the colon by adhesions. The possibility of such a cause should therefore be borne in mind in dealing with cases of intractable intestinal flux.

COLONIAL PHARMACISTS AND RECIPROCAL AGREEMENTS.

THE Privy Council has approved a by-law made by the Council of the Pharmaceutical Society of Great Britain which empowers the society's council to enter into reciprocal agreements with colonial pharmaceutical authorities for the admission to the Register of Chemists and Druggists, without examination, of persons who, after approved courses of study and examination, have become registered in any British colony as entitled to carry on the business of a chemist and druggist in that colony. Draft regulations have been prepared by the council in consultation with representatives of Colonial Pharmacy Boards, which, it is suggested, might form the basis for reciprocal agreements. These provide that every applicant should produce evidence (1) of having passed a preliminary examination of such a character as to be a guarantee of a sound preliminary educational training; (2) of having been trained in a chemist's shop, for at least three years, in the translation and dispensing of prescriptions; and (3) of having passed, after systematic study, a qualifying examination, practically equal in scope and standard to the examination of the Pharmaceutical Society of Great Britain. The British qualifying certificate is already accepted for registration in lieu of examination in most parts of the Empire, but hitherto the Canadian Pharmacy Boards have refused to accept it on the ground that their certificates are not recognised in this country. Now that the new by-law is confirmed the Pharmaceutical Society will, for the first time, be in a position to register Canadian and other colonial pharmacists without examination.

THE NATURE AND TREATMENT OF DIABETES.

IN another column we publish an article on the Dietetic Treatment of Diabetes by Dr. P. J. Cammidge, whilst in THE LANCET of Feb. 24th and March 2nd and 9th, we published the Lettsomian lectures delivered before the Medical Society of London by Dr. Archibald E. Garrod on Glycosuria. The former, as its title indicates, deals mainly with therapeutics, whilst the latter is chiefly concerned with theoretical and pathological considerations. Dr. Garrod draws attention to many morbid conditions which bring about disturbances of the metabolism of carbohydrates, and also points out that such disturbances manifest themselves in several different ways. He also reviews the pathogeny of diabetes, and shows that in some cases the nervous system is at fault, and that in others the thyroid, the pituitary, or the pancreas is the seat of the disease, but he expresses the opinion generally held that in the majority of cases encountered in practice no indications are found of the underlying lesion upon which the metabolic derangement depends. With regard to treatment, Dr. Garrod refers to the efficacy of restriction of diet, which has ameliorated the lot and prolonged the lives of hosts of sufferers from diabetes; he admits, however, that it is essentially a symptomatic therapy based on the fact that it is the metabolic derangement which proves fatal to so many patients. He further argues that until more is known of the conditions that underlie the diabetic syndrome a more radical method of treatment cannot be determined on. Dr. Cammidge's, therefore, is a suitable supplement to Dr. Garrod's lectures, for, disregarding the questions which have not yet been definitely answered as regards the origin of the disease, he explains at length a rational method of overcoming the metabolic derangement. The basis of his method is not new—namely, that the aim of modern treatment is to balance the diet in such a way that nutrition is as perfect as possible without there being an unnecessary strain on the organs of metabolism in any direction. One point, however, particularly merits the attention of practitioners—namely, that it is not sufficient merely to give a patient lists of foods which he may take and avoid, but he must be instructed in how much of each permitted food he may, and must, take to keep up the supply of energy he requires. A study of Dr. Garrod's remarks and the suggestions as to the required dietary made by Dr. Cammidge will yield much valuable information as to the present state of knowledge in regard to the nature and treatment of diabetes.

AT the adjourned annual clinical debate of the Chelsea Clinical Society on March 19th, Professor Wilhelm Einthoven, M.D., of Leyden, read a paper on the Various Forms of the Human Electro-cardiogram and their Significance, which will be published in THE LANCET.

THE King and Queen on March 16th paid a surprise visit to Guy's Hospital, where they were received by Lord Goschen, treasurer, and Sir Cooper Perry, medical superintendent.

BRISTOL GENERAL HOSPITAL.—The eightieth annual meeting was held on March 11th at the hospital, the Lord Mayor of Bristol being in the chair, and supported by the Bishop of Bristol, Mr. Joseph Storrs Fry, president and treasurer, and Mr. Herbert M. Baker, chairman of committee. The report was on the whole satisfactory. The work done reached a record height. The in-patients numbered 2787, an excess of 136 over 1910, and the out-patients 40,578, an advance of 535. The in-patient figures have increased by 29 per cent. in five years, and the average stay of each in-patient during 1911 was 23·5 days only. It is no exaggeration to say that the hospital has been quite full, almost without respite, for several years, so that the projected extensions are urgently necessary. The ordinary receipts were £11,524, or £547 less than in 1910; this was due to a falling off in donations, which is fully accounted for by the fact that during the past year the Bristol public gave nearly £45,000 for the wing about to be built. The ordinary expenditure reached £15,320, the increase of £563 over last year being entirely accounted for by new and increased salaries. Legacies amounting to £6625 were received, the committee being able to invest about £3700. There is a balance due to the treasurer of £2052. Other points of interest in the report were an allusion to the effects of the Insurance Act, pointing out that the work of the hospital would scarcely be touched by the establishment of the new medical service, so that diminution of the subscription list is sincerely to be deprecated; the impending retirement after three years' excellent service of the senior resident, Mr. C. A. Moore, who will, however, be still connected with the hospital in an honorary capacity; and the beginning of the new wing, the site for which is being rapidly cleared. Mr. Mervyn King, vice-president, said that in 30 years' experience he had never known the work of the hospital so efficiently done as at present.

CRAWFORD WILLIAMSON LONG, THE PIONEER OF ANÆSTHESIA.

BY DUDLEY W. BUXTON, M.D., B.S., M.R.C.P.,
ANÆSTHETIST TO UNIVERSITY COLLEGE HOSPITAL AND LECTURER ON ANÆSTHETICS IN UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.

(*Concluded from p. 673.*)

Statement of Dr. Long.

THE following statement made by Dr. C. W. Long in 1849 to the Medical Society of Georgia[1] is of great interest:—

For nearly three years the various medical journals have contained numerous articles on the employment of sulphuric ether by inhalation, for the purpose of rendering patients insensible to pain during surgical operations.

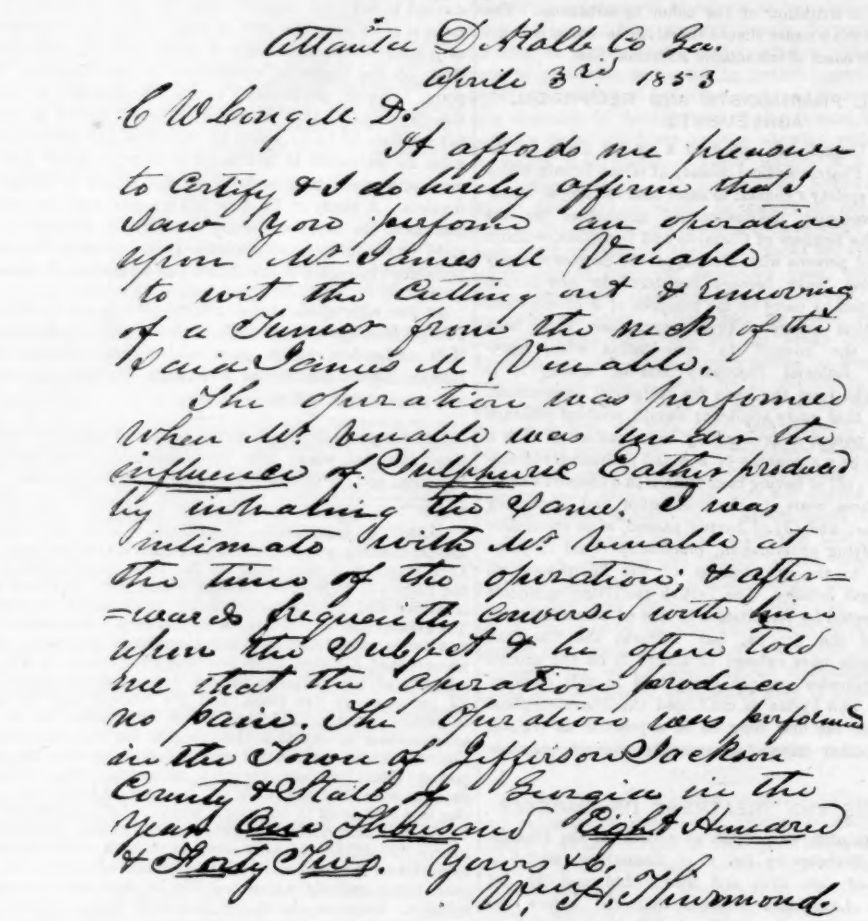
The first notice I saw of the use of ether, or rather of Dr. Morton's "Letheon," as an anæsthetic, was in the editorial of the *Medical Examiner* for December, 1846, in which the editor gives the following extract from a paper by Dr. H. J. Bigelow, contained in the *Boston Journal*. "The preparation (Letheon) is inhaled from a small two-necked glass globe, and smells of ether, and is, we have little doubt, an ethereal solution of some narcotic substance."

Having on several occasions used ether since March, 1842, to prevent pain in surgical operations, immediately after reading this notice of "Letheon" I commenced a communication to the editor of the *Medical Examiner* for publication in that journal to notify the medical profession that sulphuric ether when inhaled would of itself render surgical operations painless, and that it had been used by me for that purpose for more than four years.

I was interrupted when I had written but a few lines and was prevented by a very laborious country practice from resuming my communication until the *Medical Examiner* for January, 1847, was received, which reached me in a few days after reading the December number. It contained several articles, giving accounts of different experiments in etherisation, in which surgical operations were performed without pain. On reading these articles I determined to wait for a few months before publishing an account of my discovery, and see whether any surgeon would present a claim to having used ether by inhalation in surgical operations prior to the time it was used by me.

A controversy soon ensued between Messrs. Jackson, Morton and Wells, in regard to who was entitled to the honour of being the discoverer of the anæsthetic powers of ether, and a considerable time elapsed before I was able to ascertain the exact period when the first operations were performed. Ascertaining this fact, through negligence I have now permitted a much longer time to elapse than I designed, or than my professional friends with whom I had consulted advised: but as no account has been published (so far as I have been able to ascertain) of the inhalation of ether being used to prevent pain in surgical operations as early as March, 1842, my friends think I would be doing myself injustice not to notify my brethren of the medical profession of my priority of the use of ether by inhalation in surgical practice.

FIG. 4.



Atlanta DeKalb Co Geo.
April 3rd 1853

C W Long M D.

It affords me pleasure to Certify & I do hereby affirm that I saw You perform an operation upon Mr James M Venable to wit the Cutting out & removing of a Tumor from the neck of the said James M Venable.

The Operation was performed when Mr Venable was under the influence of Sulphuric Æather produced by inhaling the same. I was intimate with Mr Venable at the time of the operation; & afterwards frequently conversed with him upon the Subject & he often told me that the operation produced no pain. The Operation was performed in the Town of Jefferson Jackson County & State of Georgia in the year One Thousand Eight Hundred & Forty Two. Yours &c.

Wm H Thurmond.

I know that my interests have suffered from not making an earlier publication, and I would not be persuaded at this late stage of the ether controversy to present my claim to being the first to use ether as an anæsthetic in surgical operations, if I were not fully satisfied of my ability to establish its justness.

Account of First Two Operations.

Then follows Dr. Long's statement setting forth the chain of reasoning which led him to employ ether as an anæsthetic. We have already quoted this. Long continues:—

The first patient to whom I administered ether in a surgical operation was Mr. James M. Venable, who then resided within two miles of Jefferson, and at present lives in Cobb County, Georgia. Mr. Venable consulted me on several occasions in regard to the propriety of removing two small tumours situated on the back of his neck, but

[1] This and copies of other documents were added as protocols to this original paper, but are not reproduced in the present article.

would postpone from time to time having the operations performed from dread of pain. At length I mentioned to him the fact of my receiving bruises while under the influence of the vapour of ether without suffering, and as I knew him to be fond of and accustomed to inhale ether, I suggested to him the probability that the operations might be performed without pain, and proposed operating on him while under its influence. He consented to have one tumour removed, and the operation was performed the same evening. The ether was given to Mr. Venable on a towel, and when fully under its influence I extirpated the tumour. It was encysted and about half an inch in diameter. The patient continued to inhale ether during the time of the operation, and when informed it was over seemed incredulous until the tumour was shown him. He gave no evidence of suffering during the operation, and assured me after it was over that he did not experience the slightest degree of pain from its performance. This operation was performed on March 30th, 1842.

The second operation I performed upon a patient etherised was on June 6th, 1842, and was on the same person for the removal of another small tumour. This operation required more time than the first, from the case of the tumour having formed adhesions to the surrounding parts. The patient was insensible to pain during the operation, until the last attachment of the cyst was separated, when he exhibited

FIG. 5.

James Venable
To Dr C. W. Long Dr
1842. cts
January 28th Sulphuric Ether 25
March 30 Ether & Extracting tumour 2.00
May 13 Sulphuric Ether 25
June 6 Extracting Tumour 2.00

Georgia
Jackson County } I D. J. Hinton Clerk of the Superior Court of said County do certify that the above account is a true copy of an original entry made in his Book for Medical accounts for the year 1842.

Given under my hand & seal of office this 2nd day of March 1849.
D. J. Hinton, Clerk S.C.

signs of slight suffering, but asserted after the operation was over that the sensation of pain was so slight as scarcely to be perceived. In this operation the inhalation of ether ceased before the first incision was made. Since that time I have invariably directed patients, when practicable, to continue its inhalation during the time of the operation.

Having so long neglected presenting my claim to the discovery of the anæsthetic power of ether, for the purpose of satisfying the minds of all of its justness, I have procured, I conceive, a sufficient number of certificates to establish the claim indisputably.

In Long's paper appear certificates from some of his patients as well as from eye-witnesses of the operation. Fig. 4 is a fac-simile of one of these.

Other Operations.

My third experiment in etherisation was made on July 3rd, 1842, and was on a negro boy, the property of Mrs. S. Hemphill, who resides nine miles from Jefferson. The boy had a disease of a toe, which rendered its amputation necessary, and the operation was performed without the boy evincing the least sign of pain. I present Mrs. Hemphill's statement of the report the boy gave her of the operation on his return home, which I conceive is sufficient on this point.

These were all the surgical operations performed by me during the year 1842, upon patients etherised, no other case occurring in which I believed the inhalation of ether applicable. Since 1842 I have performed one or more surgical operations annually on patients in a state of etherisation.

The question will no doubt occur, Why did I not publish the results of my experiments in etherisation soon after they were made? I was anxious, before making my publication, to try etherisation in a sufficient number of cases to satisfy my mind that anæsthesia was produced by the ether, and was not the effect of the imagination or owing to any insusceptibility to pain in the persons experimented upon.

At the time I was experimenting with ether there were physicians, high in authority and of justly distinguished character, who were the advocates of mesmerism, and recommended the induction of the mesmeric state as adequate to prevent pain in surgical operations. Notwithstanding thus sanctioned, I was an unbeliever in the science, and of the opinion that if the mesmeric state could be produced at all it was only on those of "strong imagination and weak minds," and was to be ascribed solely to the workings of the patients' imaginations. Entertaining this opinion, I was the more particular in my experiments in etherisation.

Surgical operations are not of frequent occurrence in a country practice, and especially in the practice of a young physician, yet I was fortunate enough to meet with two cases in which I could satisfactorily test the anæsthetic powers of each. From one of these patients I removed three tumours the same day. The inhalation of ether was used only in the second operation, and was effectual in preventing pain, while the patient suffered severely from the extirpation of the other tumours. In the other case I amputated two fingers of a negro boy. The boy was etherised during one amputation and not during the other; he suffered during one operation and was insensible during the other.

I have procured the certificates of the lady from whom the tumours were removed and of her husband, who was present and witnessed the

operations. These certificates were produced in preference to those establishing other operations, because they not only show that the experiments were continued from year to year, but also show that they were conducted so as to test the power of etherisation.

After fully satisfying myself of the power of ether to produce anæsthesia, I was desirous of administering it in a severer surgical operation than any I had performed. In my practice, prior to the published account of the use of ether as an anæsthetic, I had no opportunity of experimenting with it in a capital operation, my cases being confined, with one exception, to the extirpation of small tumours and the amputation of fingers and toes.

I have stated that ether was frequently inhaled in this and some of the adjoining counties for its exhilarating effects, and although I am conscious that I do not deserve any credit for introducing its use for that purpose, yet as others through their friends have claimed to be the first to show its safety, most of the certificates I have obtained establish the fact of its frequent inhalation for its exhilarating effects. I met with R. H. Goodman, who was present the night ether was first inhaled in Jefferson, and who removed to Athens, and introduced its inhalation in that place, and presented his certificate. All the young gentlemen who were present the night I first administered ether, with one exception, are living, and their certificates can be procured, if necessary.

I have now, in a very concise manner, presented a "plain unvarnished" account of some of my experiments in etherisation, and have said nothing of the comparative methods of ether, and other anæsthetics, because that was foreign to my present subject. Had I been engaged in the practise of my profession in a city where surgical operations were performed daily, the discovery would, no doubt, have been confided to others, who would have assisted in the experiments, but occupying a different position, I acted differently, whether justifiable or not. The result of my second experiment in etherisation was such as to lead me to believe that the anæsthetic state was of such short duration that ether could only be applicable in cases in which its effects could be kept up, by constant inhalation, during the time of the performance of the operation. Under this impression, up to January, 1847, I had not used ether, but in one case, in extracting teeth, and thus deprived myself of experimenting in the only class of cases which are of frequent occurrence in a country practice.

While cautiously experimenting with ether, as cases occurred, with a view of fully testing its anæsthetic powers, and its applicability to severe as well as minor surgical operations, others more favourably situated engaged in similar experiments, and consequently the publication of etherisation did not "bide my time." This being the case, I leave it with an enlightened medical profession to say whether or not my claim to the discovery of etherisation is forfeited, by not being presented earlier, and with the decision which may be made I shall be content.

The fac-simile of the original entry in Dr. Long's account-book of his charge made to the first patient, J. M. Venable, possesses interest (see Fig 5).

Ether, 1842–1911.

The narrative given by Long of his first administration of ether to a patient in 1842, that by Morton, which is more detailed, referring to his demonstration of the effects of Letheon on a patient in the Massachusetts General Hospital (1846), and that given in great detail of the first ether operation performed in a London hospital—viz., University College Hospital—when Liston operated, reveal the fact that very little was known about anæsthetics and less about methods. In the one case a towel was employed, in the other two a primitive inhaler, consisting of an ether chamber and a series of tubes connecting it with a face-piece.

After Simpson introduced chloroform at the end of 1847, ether, at all events in this country, was neglected in favour of the newer claimant, chloroform. The perils of the latter incident to the methods adopted in its exhibition soon led to fresh attempts being made to employ ether or some mixture of it and chloroform. The committee of the Royal Medical and Chirurgical Society in its report published in 1864 extolled ether's safety, but pointed out as its inherent drawback that the induction of anæsthesia by it was too slow for convenience. Then came the rational attempts of Clover, Ormsby, and many more to remove this disability by the use of closed inhalers. No practical attempt was, however, made to study a percentage method for etherisation. The very safety of the drug became its chiefest danger, since etherists were so obsessed by the fact that ether does not lower blood pressure or cause cardiac collapse through depression, that they failed to recognise the perils incident to over-stimulation, especially in asthenic persons. The dangers of post-operative chest troubles were not existent in the pioneer days of ether because the operations performed were comparatively brief and the surgeons taught in pre-anæsthetic days prided themselves on their celerity in operating, and, indeed, were appraised by the public for this quality. To-day there is no haste, the advance of surgery has invaded the regions once immune from the knife; if ether is adopted for this wider range of operations it is necessary that methods of using it must follow on other than the traditional lines. To safeguard against excessive dosage we rely on mixed methods, such as the preliminary hypodermic injection of scopolamine, morphine, and atropine; we adopt an open mask, evaporating from an enormously expanded area provided by many folds of gauze, and so obtain a more complete nebulation of our vapour; we introduce ether directly into the blood-stream in an artificial circulating fluid of physiological saline solution by intravenous infusion, with the hope of maintaining an equable and low-grade partial saturation of the neural tissue. In every case, we must remark, the supreme difference consists in the fact that we have replaced a method of excessive dosing by one of moderation and in most instances capable of rapid variation in the strength of ether employed. We have been too overborne by *a priori* reasoning, too obedient to traditional authority. Whether our newer methods may not introduce fresh dangers we cannot as yet say; if they do it will be probably because our technique is at fault, and this must be amended. It is startling when we think of the early workers to find the modern etherist safely and easily encompass anæsthesia with ether for tongue or jaw operations. Yet such is the case. By the intratracheal insufflation method now so efficiently carried out in America we find ether conveyed into the lungs without the inconveniences formerly incident to the method of introducing ether by oral inspiration. The experience gained gives promise of even more efficient plans of using ether, of saving life, and enabling the modern surgeon to perform his tasks, often almost daunting in their complexity and difficulty, without the added anxiety of an anæsthesia either imperilling the patient's life or necessarily imperfect owing to the patient's reaction towards the drug employed. If Long's work was the first step towards what we have achieved to-day, and it was so, to him we owe this much that we do his memory great and abiding honour. But we must realise, also, that anæsthesia to-day is on its trial, it must advance and trample on tradition and rely upon experiment unless we are content to forsake the hope of founding a science, and are willing to content ourselves with a mere handicraftsman's place in the ranks of the medical profession.

I desire to express my thanks to Mrs. Long Taylor, through whose kindness I have been furnished with documentary evidence of the accuracy of the facts I have advanced about her father, Crawford W. Long; also to Dr. George Foy, of Dublin, to whose unique knowledge of this matter and collection of memorials of Crawford Long I have been most generously made welcome.

THE FINAL REPORT OF THE ROYAL COMMISSION ON VIVISECTION.

THIS long expected report has been reviewed in general terms already in our columns, but more detailed notice of it is due to our readers.

Since the Royal Commission on Vivisection was appointed on Sept. 17th, 1906, two of the Commissioners, Lord Selby (chairman) and Mr. John Tomkinson, have died. Mr. Tomkinson was not replaced, and Mr. A. J. Ram, K.C., succeeded Lord Selby in the chairmanship. The other surviving Commissioners are Colonel Lockwood, Sir William Selby Church, Sir William J. Collins, Sir John McFadyean, Sir Mackenzie Dalzell Chalmers, Dr. W. H. Gaskell, and Dr. George Wilson. The secretary, Captain Clive Bigham, retained his office throughout the inquiry.

The instructions to the Commissioners were: "To inquire into and report upon the practice of subjecting live animals to experiments, whether by vivisection or otherwise; and also to inquire into the law relating to the practice and its administration, and to report whether any, and if so what, changes are desirable." In carrying out their instructions the Commission held more than 70 meetings and examined a large number of witnesses, including representatives of the Royal Colleges of Physicians and Surgeons, and of the Royal Society, prominent exponents of medical research, representatives of antivivisection societies, and ministers of religion. They also considered papers from various official, medical, scientific, and other sources, bearing on the questions before them. They naturally consider, therefore, that the evidence before them has informed them concerning every class of opinion on the subject. The report as a whole is signed by every surviving member of the Commission; but Colonel Lockwood, Sir William Collins, and Dr. George Wilson append a memorandum of eight pages containing certain

reservations, to which Dr. Wilson adds a further memorandum of no less than 65 pages, as against the 64 pages of the report itself.

SUMMARY OF REPORT.

We cannot do better than consider the report in the same order and subdivisions as are adopted by the Commissioners. These are: 1. The administration of the Act of 1876; the powers and practice of the Home Office in relation thereto; and an examination of certain specific and general charges brought against the office in regard to its administration of the Act. 2. Questions relating to the whole subject of animal experimentation—viz., (*a*) the progress of medical science in connexion with animal experimentation, with the result of such experiments in regard to the prevention and cure of disease and the advance of physiological knowledge; (*b*) the question of pain and anæsthesia; and (*c*) the moral question as to the justifiability of such experiments. The Commissioners finally consider some of the suggestions made to them and submit certain recommendations.

The Administration of the Act.

After briefly recounting the history of legislation against cruelty to animals up to the Antivivisection Act of 1876, with a summary of the provisions of that Act and a brief comment on the status of legislation on the subject in the British Colonies and foreign countries, the Commissioners proceed to consider the administration of the Act in Great Britain in respect of the various certificates licensing places or persons for the performance of experiments; the relations of the Home Office to the Association for the Advancement of Medicine by Research; the duties of inspectors; records, reports, and returns; and the administration of the Act in Ireland. They next deal with the criticisms of certain persons, foremost among which is an indictment of 12 counts by Mr. Stephen Coleridge. Mr. Coleridge began each count with the formula: "I am here to charge the Home Office officials." It is unnecessary to detail these charges—further than to say that they all accuse the Home Office, as the authority appointed to control the working of the Act, of grave dereliction in the performance of its duties—because, after a most careful, impartial, and thorough examination of each of the 12 charges, the Commissioners state:—

These twelve charges of Mr. Coleridge's are the outcome of a ten years' investigation of the Administration of the Act by the Department, conducted by an acute and indefatigable critic supported, as he told us, with ample funds. We have indicated the points in which we think that the administration of the Home Office may be open to criticism, but we are of opinion that, on the whole, the working of the Act has been performed with a desire faithfully to carry out the objects which its framers had in view.

Miss Lind-af-Hageby's charges, as formulated in a book (written in collaboration with Miss Schartau), "The Shambles of Science," are next considered. Her most sensational charges, that of the rabbit placed in a freezing-box, and of the marmot alleged to have had its spinal cord severed, are forbearingly described as "founded on a misapprehension." In like manner the allegations of Mrs. Cook, Lieutenant-Colonel Lawrie, and Mr. J. W. Graham are conclusively shown to be mistaken. Concluding this part of their report the Commissioners state that:—

After careful consideration of the above cases we have come to the conclusion that the witnesses have either misapprehended or inaccurately described the facts of the experiments.

Then follows this clause, significant, indeed, in view of the unanimous signature of the report:—

So far as we can judge we believe that holders of licences and certificates, with rare exceptions, have endeavoured with loyalty and good faith to conform to the provisions of the law.

We desire further to state that the harrowing descriptions and illustrations of operations inflicted on animals, which are freely circulated by post, advertisement, or otherwise, are in many cases calculated to mislead the public, so far as they suggest that the animals in question were not under an anæsthetic. To represent that animals subjected to experiments in this country are wantonly tortured would, in our opinion, be absolutely false.

The Progress of Science and Results of Experiments on Animals.

The report now states that:—

The sciences of physiology and pathology on which the progress of medicine and surgery mainly depends have been built up partly by observation and partly by experiment. Inasmuch as the subject matter of physiology is living things, the question naturally arises as to whether that science is not *à priori* likely to be advanced by experiments on living animals, and it is necessary to inquire whether, in fact, the history of physiology does or does not show that it has been th...s advanced.

In the course of this inquiry, after a consideration in general terms of "The Influence of Experiment on the Advance of Physiology as a Pure Science," and "Physiological Discoveries which are stated to have been of Immediate Advantage in the Practice of Medicine and Surgery," the Commissioners consider in detail the evidence submitted to them in proof of: (1) The Benefits to the Practice of Medicine Claimed as the Result of Experiments on Living Animals; and (2) the Advances in the Practice of Surgery Claimed as the Result of Experiments on Living Animals.

It is stated that "the practice of medicine depends on physiology—the science of the normal functions of the body—on pathology—the science of disease—and on pharmacology and therapeutics—the sciences of the action of drugs, &c., in health and disease. Witnesses of eminence and experience have testified to the necessity of experimentation on animals in building up these basic sciences." The value of experimentation has been shown by the establishment of accurate indications for the administration of previously known drugs—e.g., digitalis in heart disease; the introduction of new drugs (all drugs introduced within the past 40 years, with the single exception of pilocarpine, being due to animal experimentation), soporifics (chloral, sulphonal, veronal), local anæsthetics (cocaine, eucaine, stovaine), analgesics and antipyretics (antipyrine, antifebrin, phenacetin, exalgin), physostigmine, nitrites in angina pectoris, diuretics (caffeine, theobromine, diuretin), and urinary disinfectants (urotropine), and finally for the standardisation of certain drugs.

Antiseptic and aseptic surgery.—In reference to the attempts that have been made to discredit the immortal work of Lister, the report, after detailing the history of his researches, says:—

Certain witnesses have emphasized the distinction between the antiseptic and the aseptic methods, and have pointed out that the late Mr. Lawson Tait and others successfully used what is now known as the aseptic method at a time when most surgeons were using the antiseptic method, but both methods are clearly traceable to the recognition of the need of cleanliness in surgery, and neither can be dissociated from the work of Lord Lister, as founded on Pasteur's researches on the origin of putrefaction and septic disease.

Anæsthesia.—While admitting that "the discovery of anæsthetics owes nothing to experiments on animals," the report is careful to point out that "thousands of experiments have, however, been made on animals with a view to elucidate the mode of action and the methods of preventing danger from the use of anæsthetics." Reference is also made to the introduction of the subcutaneous and intraspinal injections of local anæsthetics as due to animal experiments.

Improvement in technique.—The report quotes largely in this connexion from Sir Henry Morris's evidence referring to the localisation of the motor centres in relation to brain abscess, tumours, and injuries, the removal of the gall-bladder and of the larynx, nephrectomy, and intestinal operations, and from Sir Victor Horsley's evidence referring to the last named. Reference is also made to Lord Lister's researches on ligatures, and to Sir H. Swanzy's evidence on animal experiments in relation to ophthalmic surgery.

Infectious diseases in general are next dealt with, special attention being given to the evidence of Sir John Simon; then the relations of tuberculosis, plague, cholera and typhoid, malaria, yellow fever, sleeping sickness, diphtheria, and scarlet fever, tetanus, dysentery, Mediterranean fever, and snake poison are discussed severally in detail. The relation of experimental research to the work of the public health authorities is reviewed, and finally, its bearing on the diseases of animals themselves. They point out that of recent years the value of the experimental method has been very largely recognised by the public at large as well as by various public bodies, and cite particularly—

1. The foundation of Schools of Tropical Medicine, subsidised by the Colonial Office and Colonial Governments, and the appointment of research expeditions or commissions to investigate on the spot such diseases as sleeping sickness, plague, malaria, Malta fever, &c.
2. The foundation of an Imperial Research Fund for the purpose of investigating cancer.
3. The appointment of a Royal Commission to investigate by experimental methods and otherwise that great scourge to the human race, tuberculosis.

This part of the report ends with the following conclusions:—

We have received evidence from persons eminent in physiological, pathological, and sanitary science who have testified to their belief that knowledge has been acquired in regard to the vital functions, the causes

of disease, and also in regard to means for their prevention and cure which, in their opinion, but for such experiments, could not have been acquired. We have, on the other hand, heard many witnesses, some of them having medical qualifications, who have disputed that valuable knowledge has been obtained by such experiments, maintaining that this knowledge has been erroneously attributed to such experiments, or who have contended that success has not attended the application of the knowledge to the preventive or curative treatment of disease.

Having regard to the witnesses who have appeared before us and to the evidence which we have received, there can be no doubt that the great preponderance of medical and scientific authority is against the opponents of vivisection. This is more markedly so now than was the case before the Royal Commission of 1875.

On these questions, and apart altogether from the moral and ethical questions involved in the employment of experiments on living animals for scientific purposes, we are, after full consideration, led to think: (1) That certain results, claimed from time to time to have been proved by experiments upon living animals and alleged to have been beneficial in preventing or curing disease, have, on further investigation and experience, been found to be fallacious or useless. (2) That, notwithstanding such failures, valuable knowledge has been acquired in regard to physiological processes and the causation of disease, and that useful methods for the prevention, cure, and treatment of certain diseases have resulted from experimental investigations upon living animals. (3) That, as far as we can judge, it is highly improbable that without experiments made on animals mankind would at the present time have been in possession of such knowledge. (4) That, in so far as disease has been successfully prevented or its mortality reduced, suffering has been diminished in man and in lower animals. (5) That there is ground for believing that similar methods of investigation if pursued in the future will be attended with similar results.

Pain and Anæsthesia.

In this section the Commissioners discuss the question how far immunity from pain in experiments on animals is, or can be, secured. They enter into the meaning of "incomplete anæsthesia"; they discuss "movements other than reflex movements, purposive movements, struggling, and vocal cries as occurring under anæsthesia and yet not in their [i.e., scientific witnesses'] opinion indicative of any suffering, since in the case of man these are found on recovery to have been either unconscious or unassociated with any painful recollections." They consider general anæsthetics, "pithing," the use of morphia, curare, and conclude that—

After careful consideration of the whole question of anæsthetics as applied to experimental investigations on living animals, we are led to the conclusion that by the use of one or other or of a combination of several well-known anæsthetics complete insensibility to pain can be secured.

In regard to inoculations, they consider that—

From the foregoing conclusions it is clear that although in the large majority of experiments performed under Certificate A (which dispenses with the use of anæsthetics) the animals do not appear to suffer pain, it is also clear that, even if the initial procedure in cases under that certificate may be regarded as trivial, the subsequent results of this procedure must in some cases, at any rate, be productive of great pain and much suffering.

In their recommendations they deal with the additional safeguards which in their opinion should be applied to inoculated animals as well as to animals operated on.

The Moral Question.

On the question whether, and how far, the objection taken by some that such experiments are morally wrong and unjustifiable can be sustained, the opinions (for of course this question is purely a matter of opinion, not of fact) of Mrs. Cook, Miss Arabella Kenealy, L.R.C.P., Mr. James Graham, M.A., the Rev. J. Page Hopps, Sir George Kekewich, Miss Lind-af-Hageby, the Rev. L. S. Lewis, Dr. G. H. Burford, Mr. Stephen Coleridge, Mr. John Hughes, Dr. C. R. J. A. Swan, Mr. R. J. M. Cowen, L.R.C.P. & S. Irel., Mr. A. G. Scott, Sir F. Banbury, Bart., M.P., and Mr. J. H. Levy were taken on the antivivisection side; while Lord Rayleigh, Lord Justice Fletcher Moulton, F.R.S., Sir Victor Horsley, and incidentally many of the other scientific witnesses, were heard on the side of science. It is satisfactory to find the Commission's conclusion on this point clearly and emphatically stated in the following terms:—

After full consideration we are led to the conclusion that experiments upon animals, adequately safeguarded by law, faithfully administered, are morally justifiable and should not be prohibited by legislation.

As regards the different classes of animals used for experiments and the possibility of making discrimination between them for such purpose ..... there can be little doubt that the general moral sense of civilised mankind would be prepared to make such differentiation. ..... The *differentia* in such case would probably be found to consist in the degree of association with, or of affinity or utility to, man.

..... Thus we think that the higher apes (anthropoid) and the dog and cat present claims for special consideration, and with these claims we deal subsequently in our report.

Recommendations.

The Commissioners next review "various practical suggestions" put before them, directed to amending the law at present governing animal experiments, and after repeating that notwithstanding adverse criticisms the Act, in their opinion, "has nevertheless been so worked as to secure a large degree of protection to animals subject to experiment, and at the same time so as not to hamper or impede research," submit recommendations which we may summarise as follows:—

1. An increase in the number of inspectors, either a chief inspector and three inspectors for Great Britain, all whole-time officials, in place of existing arrangements; or an additional number of part-time inspectors who could give such time to their duties as would be equivalent to the services of four whole-time men. In Ireland sufficient inspection could be obtained by the services of one or more part-time inspectors. They further recommend the limitation as far as possible of licences to those places which are in connexion with universities or other public authorities or institutions.

2. Entire prohibition of the use of curare, or the presence of an inspector throughout the experiment who should satisfy himself that complete anæsthesia is maintained until death.

3. They cannot recommend any alteration of the existing law in relation to experiments for attaining manual skill.

4. They conclude that the production of sera and vaccines for commercial purposes ought not to be brought within the provisions of the Act.

5. As regards the exclusion of certain classes of animals, the majority agree that if any alteration in the existing procedure be made "the special enactments now applicable to horses, asses, and mules might be extended to dogs and also to cats and anthropoid apes."

6. In "pithing" "no lesser operation than a complete destruction of the brain or decapitation should be accepted as equivalent to complete anæsthesia, and in a warm-blooded animal it should be conducted only by a licensed person, and the operation itself should be performed under an adequate anæsthetic."

7. The Commissioners, "having regard to the limited knowledge which at present obtains as to the capacity of suffering" in cold-blooded animals, cannot recommend their exemption from the Act.

8. No change in the present system with regard to licences and certificates is necessary or desirable, but no certificate should be available until the applicant has received notice that it has not been disallowed by the Secretary of State. The existing practice is endorsed of granting licences and certificates to foreigners on condition that the experiments should be done only under the superintendence of the responsible head of some particular laboratory, and the restriction should be attached to all licences and certificates granted to foreigners.

9. The following additional safeguards against pain are recommended to be attached to certificates:—(1) That an inspector should have power to order the painless destruction of any animal which, having been the subject of any experiment, shows signs of obvious suffering or considerable pain, even though the object of the experiment may not have been attained; and (2) that in all cases in which, in the opinion of the experimenter, the animal is suffering severe pain which is likely to endure, it shall be his duty to cause its painless death, even though the object of the experiment has not been attained.

The Commissioners add:—

We regret that we cannot recommend any further extension of the "pain condition." We are anxious, as far as possible, to prevent or to limit animal suffering in every case. We have recommended that there should be increased inspection, that wide powers should be given to inspectors to order the painless destruction of any animal under experiment, and that in future, although the object of the experiment has not been attained, no animal should be allowed to live in severe pain which is likely to endure. But we do not feel justified in recommending that, when the object of the experiment has not been attained, an experimenter should in all cases be required to destroy the animal immediately it exhibits signs even of severe pain, which might in some cases be only momentary.

We are satisfied by the evidence that in the great majority of the experiments under the Act the animals do not exhibit any symptoms suggestive of severe pain, and to require the immediate destruction of an animal as soon as it exhibits such symptoms might, in our opinion, put an insuperable obstacle in the way of investigating many widespread diseases (afflicting both men and domesticated animals) with respect to which further knowledge as to their nature and treatment is in the interest of humanity urgently required.

It must not be forgotten that it is in the case of diseases which are naturally painful when they attack men or animals that experiments are most likely to involve pain to animals which are experimentally infected; as examples we may instance cancer, cholera, plague, tetanus, rabies, and snake bite.

We are compelled to accept the weighty evidence given before us to the effect that the study of animals experimentally infected with some of these diseases has given us knowledge which has been instrumental in saving much mortality and suffering both in man and animals, and we believe that discoveries already made in this way justify the hope that by the same methods knowledge may yet be extended regarding the means of preventing or curing other most painful diseases which are at present scarcely or not at all amenable to treatment. And finally we feel that as long as public opinion sanctions the infliction on animals of pain, which is not only severe but of long duration, in the pursuit of sport, and in carrying out such operations as castration and spaying, or in the destruction of rabbits and of rats and other vermin by traps and painful poisons, it would be inconsistent and unreasonable to go further than we have already gone in limiting experiments which are designed to result and, according to experience, will probably result in preventing or alleviating great human or animal suffering.

THE MINORITY RESERVATION.

In a Reservation Memorandum Colonel Lockwood, Sir William Collins, and Dr. Wilson say:—

The two main points upon which we dissent from the report are firstly as to securing by Statute that undivided responsibility of the Secretary of State which was recommended by the previous Royal Commission, but which the Act of 1876 failed to establish, and secondly as to placing a statutory requirement upon an experimenter painlessly to destroy an

animal which has been experimented upon when obvious suffering has supervened. Both points lead up to and in our opinion necessitate amendments of the law.

They consider the weight of evidence opposed to the view, that only administrative modifications are required in order to give effect to the changes which experience proves to be desirable, and they doubt whether the changes recommended can be adequately carried out without legislation. They think that "the distinction between *Licences—granted by the Secretary of State* and subject to all the restrictions in the Act, chiefly for the protection of animals, and *Certificates—granted by the Scientific Authorities* which waive the aforesaid restrictions—needs to be accentuated."

They sum up the fundamental principles upon which any special legislation should be based as follows:—

1. That all investigations upon living animals of an experimental nature by way of operation, inoculation, or infection, &c., shall only be conducted under the sanction and undivided responsibility of the Secretary of State, aided by skilled advisers, and exercising control and supervision by an adequate staff of inspectors.

2. That all such investigations which, in the absence of anæsthesia would be likely to cause pain or suffering, shall be conducted under adequate anæsthetics, skilfully and humanely administered, or if the nature of the investigation render this impracticable, then that on the supervention of real or obvious suffering, the animal shall be forthwith painlessly killed.

DR. WILSON'S RESERVATION MEMORANDUM.

Dr. Wilson, in his additional reservation memorandum, regrets that permanently impaired health and seriously impaired eyesight had prevented him from rendering assistance in the preparation of the first draft of the report. While he is in general agreement with the principal findings and recommendations of the Commission he cannot fully endorse all the opinions and conclusions which it embodies without qualification or supplement. Agreeing that with very few exceptions the specific instances of infringement of the Act as investigated have not been proved, he makes the following very significant admission:—

> For I am free to confess that, like a great many others, I was somewhat ignorant of the manifold safeguards provided under the Act for the prevention of needless pain, and as a continuous and close reader of the medical journals in which many of these experiments are published, I was often horrified with the details and entertained grave doubts as to whether such severe and prolonged operations could be performed under anæsthesia so complete as to abolish all consciousness of pain.

He recommends that inasmuch as compliance with the Act cannot be ensured, but must always mainly rest on the care, ability, and honest endeavour of the licensee, every licensee should append to his report of experiments performed a certificate that the experiments "have been conducted in strict compliance with the provisions of the Act to the best of his endeavour and belief." While he agrees that the great weight of the evidence before the Commission "is overwhelmingly in favour of the conclusion that valuable results have been obtained from experiments on animals," he does so in only a very restricted sense; he has been "far more impressed with the fallacies and failures which have attended this method of research." He suggests that "experimental physiology necessitating other than cold-blooded animals for demonstration should only be taught as part of post-graduate courses to fully qualified medical men who intend to pursue physiological research work, or who desire further tuition in this direction." He contends that "physiology could be as efficiently taught by other experimental methods, such as the employment of the Röntgen rays, and the use of the sphygmograph, spygmanometer (*sic*), and other modern appliances." While denying "that aseptic surgery was in any degree due to experiments on animals, without very considerable qualification," in the next paragraph he somewhat paradoxically admits that "the doctrine of cleanliness, either in lying-in or surgical wards, did not take root till Lord Lister led the way by his antiseptic technique." He reasserts his disbelief in the utility of anti-toxin in diphtheria, and states that in respect to the acute infectious diseases the germ or microbial theory of disease, as well as the vaccine and serum treatment based on that theory, appear to him to be illogical. He digresses to state that his experience has satisfied him in every outbreak of small-pox, "that prompt vaccination and revaccination of contacts and others, together with other appropriate measures, were far more important aids in stamping out the disease than removal of sufferers to hospital," but adds that it is his firm belief in vaccination that compels him to question the results of these new developments in medicine—viz., vaccine and serum-therapy. Without attempting to follow Dr. Wilson through a consideration of all the particular infectious diseases dealt with in detail in the Report, it will suffice to say that he claims each of these diseases as confirming his conclusion as to the illegicality of the germ theory of disease.

In a cogent letter to the *Times* of March 13th, Lord Cromer thus sums up the net result:—

"I do not think that any impartial person will be able to read this illuminating Report without coming to the conclusion that, broadly speaking, the supporters of vivisection have proved their case." This will be the view of the medical profession.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

Meeting at Long Grove Asylum.

THE quarterly meeting of this association was held on Feb. 22nd (by the courtesy of the Visiting Committee and at the invitation of Dr. C. Hubert Bond) at the London County Asylum, Long Grove, Epsom, under the presidency of Dr. WILLIAM R. DAWSON (Inspector of Lunatics in Ireland).

Dr. Bond and other members of the medical staff of the asylum conducted the party through the admission hospitals, villas, wards, administrative and medical departments of the institution, and the inspection was followed by a luncheon, at which the company included Mr. A. O. Goodrich (chairman, Asylums Committee, London County Council), Mr. A. H. Trevor (Commissioner in Lunacy), Mr. T. Hunter (chairman, Long Grove Asylum Committee), Mr. H. F. Keene (clerk of the Asylums Committee), Mr. W. Clifford Smith, M.Inst.C.E. (Asylums Engineer), Dr. F. W. Mott, (pathologist to the London Asylums), Mr. G. T. Hine, F.R.I.B.A. (architect of Long Grove), and the following past presidents of the association: Sir George Savage, Mr. H. F. Hayes Newington (treasurer of the association), Dr. P. W. Macdonald, Dr. R. Percy Smith; also Dr. Briscoe and Dr. Boycott.

Sir GEORGE SAVAGE spoke in terms of high praise concerning the equipment and administration of the asylum, and passed on to congratulate Dr. Bond on his recent appointment as one of H.M. Commissioners in Lunacy, in which new sphere he, in the name of the association, wished him every success, though with a tinge of real regret at his loss from the association and from the asylum, where he was so much esteemed.

Dr. BOND'S health having been pledged with much heartiness, he replied in a warm and grateful speech.

Mr. HAYES NEWINGTON proposed the toast of "The Visiting Committee of Long Grove Asylum," and complimented all concerned on the admirably enlightened and scientific equipment of the institution and the cordial relations subsisting between the committee and the staff.

Mr. HUNTER, in responding to the toast, said he had a great love for the work of looking after poor mentally afflicted people, and he had a splendid committee to work with. He related the history connected with the formation and equipment of the asylum, and proceeded to speak in high terms of the character and work of Dr. Bond. He was also very pleased at the cordial relations between the committee and the medical staff, and expressed their sense of loss at the departure of Dr. Bond.

Mr. GOODRICH proposed "The Medico-Psychological Association," and in doing so referred to the fact that it was established 70 years ago, and during the time which had elapsed since there had been a great deal done by it in raising the standard of the medical work in asylums as well as increasing the efficiency and status of the nurses, male and female, in asylums. He and other members of the Asylums Committee were pleased and interested to learn that certain of the universities had arranged to grant diplomas in Mental Diseases.

Dr. DAWSON, in the name of the association, replied, and expressed the thanks of members for Mr. Goodrich's remarks. In conclusion, he expressed their thanks for the hospitality with which they had been received by Dr. Bond.

Mr. TREVOR assured the gathering that Dr. Bond would receive a warm welcome from the other Commissioners in Lunacy whom he was about to join.

Papers Read.

Dr. G. F. BARHAM then read a paper entitled "Insanity with Myxœdema." He said the conception of the etiological

significance of myxœdema in reference to the mental disorder known as insanity of myxœdema had been much modified since hypothyroidism was regarded as the principal causal factor. The question to be answered was, To what extent were the symptoms of insanity occurring with myxœdema influenced during the recovery from that disease under thyroid treatment? It was uncommon to see in an asylum a case showing only the apathy and the volitional and memory defects of simple myxœdema; mostly there were insane ideas indicating a more complicated process. The mental symptoms were often examples of manic-depressive insanity or dementia præcox, or they might show dissociation or other mental processes underlying hysteria. He related a very illuminating case in a married woman, aged 34, who was the survivor of twins, and in whose family there were several instances of insanity. She was married 11 years, and in that time bore eight children. Following the third confinement she had symptoms of myxœdema, with terrifying dreams and visions. She made a fair recovery. After the four succeeding confinements there were always great prostration and debility, with severe head pains, insomnia, and loss of appetite. She also took to spirit drinking, and showed various unfounded suspicions. Physically she was in poor health, and the extremities were cold and pale, but there was no organic disease of any organ, and the reflexes were normal. The life of the patient was deeply influenced by certain incompatible emotional factors at conflict with one another. He contended that though under thyroid treatment the patient appeared to recover, so that she was able subsequently to remain outside an asylum, the abnormal mental state was an indication of the independent progress of the psychosis. He therefore concluded that the prognosis of insanity with myxœdema was not so favourable as had been frequently thought to be the case.—The subject was discussed by Dr. T. E. K. STANSFIELD, who narrated the case of a woman who married at the age of 20 and had four children. The symptoms of myxœdema were first noticed at her fourth pregnancy. Phosphorus had been given under the prescription of specialists, and a bad prognosis was given. This was in 1888, and it was decided to treat her with glycerine extract of sheep's thyroid, as suggested by Dr. George Murray, of Newcastle. The reaction was remarkably good, and she was eventually discharged recovered. Three years later she again became pregnant, and the birth was premature at the sixth month. For two years following she had mild psychasthenia, from which she recovered.—Dr. J. R. LORD said his own experience agreed with that given by Dr. Barham, and supported the prognosis he had given. In his cases there had nearly always been considerable general arterio-sclerosis, with, in some cases, alcoholism as a secondary factor. Psycho-analysis could not be entered into with every case, as it required too much time.—Dr. M. EDEN PAUL remarked that many cases of hypothyroidism, as the general practitioner was well aware of them, did not now come under the notice of the psychologist; they were treated by thyroid extract by the medical man. Those were the cases which justified the favourable opinion when so treated which was found expressed in general medical literature. The very fact that such a case came under the notice of the asylum medical officer showed that thyroid treatment had failed to remedy the condition.—Dr. BARHAM replied, stating that in the cases of the kind in that asylum he had not noticed arterio-sclerosis. There was one case now in the asylum, but her mental symptoms were much too acute to permit of any investigation.

Dr. DAVID BLAIR (Lancaster) read a paper on Forced Feeding, setting forth his experiences in keeping alive by forcible means patients, chiefly female, who uniformly resisted to their utmost every attempt at compelling feeding and the other necessary functions. In one such case the patient was kept alive for nine years, and he paid a tribute to the devotion of the nurses over such a long period.—The question was discussed by a number of members, and the comparative merits of nasal and œsophageal feeding were debated. The latter form was considered the more rapid, while the former was preferable for the most violent type of patient.

Dr. BERNARD HART read a highly interesting paper entitled "A Case of Double Personality," and, owing to the time of the meeting having expired, it was decided to adjourn the reading of the other papers which had been included in the programme.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on March 14th, Mr. RICKMAN J. GODLEE, the President, being in the chair.

The Secretary reported the death on Feb. 10th, 1912, at the age of 84, of the Right Hon. Lord Lister, O.M., F.R.S., past Member of the Council, and stated that the College was officially represented at the funeral service in Westminster Abbey on Feb. 16th by Mr. R. J. Godlee, President, and Mr. C. Mansell Moullin and Mr. Clinton T. Dent, Vice-Presidents.

Sir HENRY MORRIS, the Senior Member of Council, in moving a vote of condolence, referred to Lord Lister in the following words:—

"By the death of Lord Lister on Feb. 10th, 1912, surgery has lost her most brilliant student and her greatest master, England one of her most famous sons, the world one of its most illustrious citizens. He raised surgery from a dangerous and precarious practice to a precise, safe, and beneficent art, and in doing so his name became renowned throughout the civilised world. His methods have been adopted in every clime and country, and the benefits which flow from his discoveries are blessings conferred upon every race of mankind. His perspicacity, his natural insight, his fertility of resource, his power of close and discriminating observation, his philosophical reasoning, his inflexible pursuit of truth, his steadfastness of purpose, his capacity for taking pains, his unwearied patience, and his undaunted efforts to triumph over difficulties stamped him as a great example of true and scientific genius. The human sympathy which caused him to deplore the great mortality due to infective surgical disease, his solicitude to prevent suffering and premature death, his patient and unceasing labour to overcome them, and his gratification at the ultimate success of his efforts to ameliorate pain and prolong life eminently distinguished him as a great philanthropist. His gentle nature, his deep compassion, his courteous and dignified bearing, his imperturbable temper, his resolute will, his indifference to ridicule, his tolerance of hostile criticism combined to make him one of the noblest of men. His work will last for all time, its good results will continue throughout all ages, humanity will bless him for evermore, his fame will be immortal. In the fulness of years, after a glorious and satisfying career, crowned with great and various honours, having witnessed the successful completion of his work, the gentle hand of Death laid hold upon him, and Lister passed from among us. His funeral was a vast and striking testimony to the greatness and the usefulness of his life. His body perisheth, but the influence of his mind will continue everlastingly."

It was resolved that this memorial of esteem and admiration be printed, surrounded by the symbol of mourning, in the Council's minutes. It was further resolved that an inscribed tablet should be placed in a suitable and conspicuous position within the walls of the College, to serve as evidence to future generations of the honour, respect, and reverence in which the great founder of aseptic surgery was held by his contemporaries and immediate successors.

It was resolved that the following letter should be sent to Professor J. J. Lister:—

DEAR SIR,—I am directed by the President, Vice-Presidents, and Council of the Royal College of Surgeons of England to convey to you, and through you to the other members of the late Lord Lister's family, the sincere condolence of the Council and of the general body of Fellows and Members of this College on your bereavement.

They desire to express their belief that you cannot but be gratified and consoled by the numerous proofs which have been forthcoming of the universal and profound admiration for Lord Lister's pre-eminent services to surgery and mankind; and to assure you that this College, of which Lord Lister was so illustrious a Fellow, and on the Council of which he served for eight years, will ever hold his memory in the greatest honour and regard.

I am also directed to enclose you a copy of a memorial statement, and a resolution thereon, passed at the ordinary meeting of the Council held this day.

I remain, &c.,

(Sgd.) F. S. COWELL.

A report was read from Mr. C. H. Golding-Bird on the proceedings of the Central Midwives Board during the past year. The report was received and entered on the minutes, and the best thanks of the Council were given to Mr. Golding-Bird for his services as the representative of the College on that Board.

The PRESIDENT reported that Professor Arthur Keith had duly and properly delivered a course of six lectures on Certain Phases in the Evolution of Man.

The PRESIDENT reported that the committee on the National Insurance Act had held meetings at the College on Feb 6th and 26th, and a joint meeting with the committee of the Royal College of Physicians and representatives of the Society of Apothecaries at the Royal College of Physicians on March 5th, and that at this joint meeting the following resolution was adopted:—

That the Medical Faculties of the Universities of England and Wales be invited to send each a representative to join with the Committees appointed by the Royal Colleges of Physicians and Surgeons and Representatives of the Society of Apothecaries in endeavouring to safeguard the interests of their Graduates, Licentiates, Fellows, and Members in so far as they may be affected by the National Insurance Act.

The PRESIDENT reported that he and Sir Alfred Pearce Gould appeared before the Royal Commission on University Education in London on Feb. 23rd and gave their evidence on the subject of dental education in London.

A letter was read from Lady Butlin thanking the Council for the kind expression of their sympathy on the occasion of the death of her husband.

A letter was read from the Board of Education: (1) transmitting a copy of a note from the German Ambassador stating that the news of the death of Lord Lister had been received with keen regret in Germany, and conveying the condolences of the Imperial Chancellor and of the Prussian Government to the official departments interested and to the institutions of which Lord Lister was president; and (2) expressing the Board's own regret at the death of this great surgeon and man of science.

A letter was read from the executors of the late Lord Lister that under the terms of his will he had bequeathed his manuscripts and sketches to the Royal College of Surgeons of England.

The PRESIDENT stated that he had received several letters expressing appreciation of the attitude adopted by the Council in reference to the National Insurance Act.

An invitation from the President and Council of the Royal Society was read, asking the College to send a delegate to the celebrations on July 15th, 16th, and 17th of the 250th anniversary of the foundation of the Society. The President was appointed the delegate of the College.

An invitation was read from the Chancellor and Provost of Trinity College, Dublin, asking the College to send two delegates to the Bicentenary Festival of the Medical School of Trinity College on July 4th, 5th, and 6th. The President and the senior Vice-President, Mr. C. Mansell Moullin, were chosen as the delegates.

Sir John Tweedy was chosen as the representative of the College on the General Committee of Organisation of the International Historical Congress to be held in London in 1913.

A letter was read addressed to the President by Dr. Arthur Dean Bevan, of Chicago, reporting that the members of the American Medical Association were greatly pleased with Mr. Hallett's address on methods of conducting examinations for licences to practise medicine, and thanking the President for having sent him to their Conference.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 94 largest English towns having an estimated population of 17,559,219 persons in the middle of this year, 9071 births and 4930 deaths were registered during the week ending March 16th. The annual rate of mortality in these towns, which had steadily declined from 21·6 to 14·4 per 1000 in the five preceding weeks, slightly rose to 14·6 per 1000 in the week under notice. During the first eleven weeks of the current quarter the mean annual death-rate in these large towns averaged 16·5 per 1000, while in London during the same period the average death-rate did not exceed 15·6 per 1000. The annual death-rates last week in the several towns ranged from 6·2 in Grimsby, 7·5 in Ilford, 8·5 in Hornsey, 8·7 in Eastbourne, and 8·8 in Gillingham, to 19·3 in Liverpool, 20·3 in Manchester, 22·7 in Swansea, 23·4 in St. Helens, and 27·6 in Salford.

The 4930 deaths from all causes were 84 in excess of the number in the previous week, and included 434 which were referred to the principal epidemic diseases, against 394 and 378 in the two preceding weeks. These 434 deaths from the principal epidemic diseases included 159 from whooping-cough, 137 from measles, 56 from infantile diarrhœal diseases, 55 from diphtheria, 14 from enteric fever, and 13 from scarlet fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·3 per 1000, against 1·2 and 1·1 in the two preceding weeks. The deaths attributed to whooping-cough, which had declined continuously from 186 to 136 in the five preceding weeks, rose to 159 last week, and caused the highest annual death-rates of 1·7 in Walsall and in Rhondda, 1·8 in Darlington, 1·9 in Coventry, in Sheffield, and in Merthyr Tydfil, and 2·3 in Edmonton. The deaths referred to measles, which had been 88, 109, and 101 in the three preceding weeks, increased to 137 last week; the highest annual death-rates from this cause were 1·8 in Nottingham, in Manchester, and in Newport (Mon.), 2·5 in York, 5·0 in Warrington, and 5·2 in Salford. The fatal cases of infantile diarrhœa, which had increased from 39 to 53 in the three previous weeks, further rose to 56 last week, and included 24 in London and its suburban districts, and 3 in Liverpool. The deaths attributed to diphtheria, which had been 44, 53, and 49 in the three preceding weeks, rose to 55 last week; 18 deaths were recorded in London and its suburban districts, 4 in Birmingham, in Liverpool, and in Leeds, and 3 in Bradford. The deaths referred to enteric fever, which had been 20 and 14 in the two preceding weeks, were again 14 last week, and included 2 in Liverpool, 2 in Barnsley, and 2 in Cardiff. The fatal cases of scarlet fever, which had increased from 17 to 25 in the three preceding weeks, declined to 13 last week, of which number 3 occurred in Liverpool, 2 in London, and 2 in Birmingham.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had declined from 1512 to 1357 during the five preceding weeks, had slightly risen to 1384 on Saturday last; 152 new cases of this disease were admitted to these hospitals during the week, against 181, 160, and 161 in the three preceding weeks. These hospitals also contained on Saturday last 1089 cases of diphtheria, 519 of whooping-cough, 219 of measles, and 61 of enteric fever, but not one of small-pox. The 1106 deaths from all causes recorded in London were 46 fewer than the number in the previous week, and were equal to an annual death-rate of 12·8 per 1000. The deaths referred to diseases of the respiratory system, which had steadily declined from 545 to 259 during the five preceding weeks, further fell to 224 last week, and were 60 below the number registered in the corresponding week of last year.

Of the 4930 deaths from all causes in the 94 large towns, 174 resulted from different forms of violence, and 382 were the subject of coroners' inquests. The causes of 41, or 0·8 per cent., of the deaths registered last week were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and its 14 suburban districts, in Manchester, Leeds, Bristol, Bradford, Hull, Newcastle-on-Tyne, Nottingham, and in 53 other smaller towns. The 41 uncertified causes of death last week included 12 in Liverpool, 6 in Birmingham, 4 in Salford, and 2 each in Bootle, in St. Helens, and in Tynemouth.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns, having an estimated population of 2,182,400 persons in the middle of this year, 1222 births and 643 deaths were registered during the week ending March 16th. The annual rate of mortality in these towns, which had been 18·7 and 17·5 per 1000 in the two preceding weeks, further fell to 15·4 per 1000 in the week under review. During the first 11 weeks of the current quarter the mean annual rate of mortality in these towns averaged 18·6 per 1000, and was 2·1 per 1000 above the mean rate recorded during the same period in the 94 large English towns. The annual death-rates in the several Scotch towns last week ranged from 8·3 in Coatbridge, 8·6 in Paisley, and 9·1 in Kirkcaldy, to 19·3 in Leith, 20·0 in Motherwell, and 27·5 in Greenock.

The 643 deaths from all causes were 88 fewer than the number in the previous week, and included 80 which were

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING THE YEAR 1911.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1911.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.‡								Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.§	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON...	4,522,628	63	10,489	7389	1	1025	23	303	4848	101	69	24,311	5·4	9	2570	172	612	1038	144	5313	9858	2·2	67,827	15·8
West Districts.																								
Paddington	142,541	—	227	169	—	37	1	7	117	2	1	561	3·9	—	48	3	11	44	5	134	245	1·7	1897	14·2
Kensington	172,296	—	232	219	—	23	—	7	125	1	1	608	3·5	—	94	2	18	54	4	146	318	1·9	2349	14·8
Hammersmith	121,837	—	239	196	1	27	1	3	100	1	1	569	4·7	—	36	5	28	35	7	178	289	2·4	1891	16·2
Fulham	153,726	—	382	313	—	38	3	23	118	3	1	881	5·7	—	64	7	27	28	8	213	347	2·3	2203	15·1
Chelsea	66,218	—	143	83	—	7	—	5	52	—	1	291	4·4	—	30	1	5	10	—	55	101	1·5	1020	16·0
City of Westminster	159,709	1	253	145	—	30	1	6	82	3	1	522	3·3	—	23	3	14	26	4	63	133	0·8	1984	14·0
North Districts.																								
St. Marylebone	117,844	—	329	135	—	18	—	4	109	2	1	598	5·1	—	66	7	5	28	2	83	191	1·6	1772	16·1
Hampstead	85,599	—	129	151	—	14	—	6	50	—	5	355	4·2	—	14	—	17	3	2	22	58	0·7	823	10·8
St. Pancras	218,031	—	443	422	—	69	—	17	199	7	2	1159	5·3	—	108	12	37	55	7	201	420	1·9	3371	16·2
Is'ington	327,234	—	805	594	—	73	—	14	276	13	1	1776	5·4	—	130	21	51	70	12	365	649	2·0	4853	15·5
Stoke Newington...	50,669	—	99	79	—	6	—	—	42	—	—	226	4·5	—	28	3	3	18	1	28	81	1·6	658	13·6
Hackney	222,674	3	613	316	—	48	—	16	364	7	4	1371	6·2	—	148	11	20	58	8	196	440	2·0	3185	14·9
Central Districts.																								
Holborn	49,004	—	120	85	—	11	—	2	37	—	—	255	5·2	—	15	3	3	3	3	34	61	1·2	771	17·0
Finsbury	87,639	—	179	178	—	30	—	4	223	2	—	666	7·6	—	79	6	17	24	8	142	276	3·2	1725	20·4
City of London	19,475	—	23	23	—	3	—	1	14	—	—	69	3·6	—	1	1	1	1	—	10	14	0·7	293	16·6
East Districts.																								
Shoreditch	111,284	3	240	175	—	22	—	5	160	4	3	612	5·5	—	128	6	24	32	1	222	413	3·7	2226	21·1
Bethnal Green	128,247	3	243	201	—	31	1	14	248	6	1	748	5·8	—	130	4	21	49	3	248	455	3·6	2319	18·3
Stepney	279,560	39	467	517	—	80	—	30	488	7	5	1633	5·9	7	303	8	32	49	6	468	873	3·1	4834	18·1
Poplar	162,290	11	376	284	—	63	3	11	205	6	5	964	6·0	2	225	10	44	44	14	316	655	4·0	3054	19·5
South Districts.																								
Southwark	191,595	—	480	293	—	45	2	14	316	5	3	1158	6·1	—	120	6	30	64	5	298	523	2·7	3509	19·2
Bermondsey	125,840	—	302	254	—	26	—	13	152	2	3	752	6·0	—	55	6	13	50	5	212	341	2·7	2311	18·8
Lambeth	298,032	—	764	405	—	61	—	21	246	9	9	1515	5·1	—	112	8	43	67	12	336	578	1·9	4430	15·4
Battersea...	167,765	—	354	223	—	32	—	9	162	11	4	795	4·8	—	112	4	20	36	3	222	397	2·4	2391	15·3
Wandsworth	313,389	—	866	513	—	58	5	24	204	5	5	1680	5·4	—	230	10	33	70	9	293	645	2·1	3743	12·7
Camberwell	261,407	1	634	352	—	33	2	10	254	2	5	1293	5·0	—	112	7	25	45	5	276	470	1·8	3724	14·8
Deptford	109,475	1	375	165	—	13	4	2	180	—	1	741	6·8	—	69	7	15	37	2	171	301	2·8	1706	16·4
Greenwich	95,982	—	307	318	—	10	—	9	133	1	—	778	8·1	—	41	3	16	14	3	152	229	2·4	1409	15·0
Lewisham	161,677	—	349	343	—	36	—	11	105	1	3	848	5·3	—	21	5	28	18	5	128	205	1·3	1821	11·8
Woolwich...	121,509	—	514	237	—	18	—	15	81	1	3	869	7·2	—	28	3	11	6	—	102	150	1·2	1555	13·7
Port of London	—	1	2	1	—	3	—	—	6	—	—	18	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar-General's weekly returns: these two columns are therefore omitted from the Table.
§ Poliomyelitis became notifiable in the Administrative County of London on Sept. 1st, 1911.

referred to the principal epidemic diseases, against numbers decreasing from 120 to 76 in the three preceding weeks. Of these 80 deaths, 47 resulted from measles, 8 from diphtheria, 8 from infantile diarrhœal diseases, 7 from scarlet fever, 6 from whooping-cough, and 4 from enteric fever, but not one from small-pox. These 80 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·9 per 1000. or 0·6 per 1000 above that recorded in the 94 large English towns. The deaths attributed to measles, which had declined from 63 to 39 in the four preceding weeks, increased to 47 last week, and included 24 in Glasgow, 5 in Leith, 4 in Edinburgh, 4 in Kilmarnock, and 3 in Motherwell. The deaths referred to diphtheria, which had been 22, 9, and 8 in the three preceding weeks, were again 8 last week; 3 deaths were registered in Glasgow and 2 in Edinburgh. The fatal cases of diarrhœa among infants under two years of age, which had declined from 14 to 8 in the four preceding weeks, were again 8 last week, and comprised 3 in Glasgow, 3 in Dundee, and 2 in Aberdeen. The deaths attributed to scarlet fever, which had increased from 2 to 10 in the four preceding weeks, declined to 7 last week, 3 deaths were recorded in Greenock, 2 in Glasgow, and 2 in Aberdeen. The deaths referred to whooping-cough, which had decreased from 18 to 8 in the three preceding weeks, further fell to 6 last week. The 4 fatal cases of enteric fever were slightly in excess of the average in recent weeks.

The deaths referred to diseases of the respiratory system, which had steadily declined from 220 to 136 in the five preceding weeks, further fell to 98 last week, and 25 deaths were attributed to different forms of violence.

VITAL STATISTICS OF LONDON DURING 1911.

IN the accompanying table statistics of sickness and mortality in the City of London and in each of the metropolitan boroughs are summarised for the year 1911. With regard to the notified cases of infectious disease, it appears that the number of persons reported to be suffering from one or other of the ten diseases specified in the table was equal to a rate of 5·4 per 1000 of the population, estimated at 4,522,628 persons in the middle of the year; in the three preceding years the rates had been 7·4, 6·6, and 4·5 per 1000 respectively. Among the various boroughs the rates last year ranged from 3·3 in the City of Westminster, 3·5 in Kensington, 3·6 in the City of London, 3·9 in Paddington, and 4·2 in Hampstead, to 6·1 in Southwark, 6·2 in Hackney, 6·8 in Deptford, 7·2 in Woolwich, 7·6 in Finsbury, and 8·1 in Greenwich. The cases of small-pox notified during the year numbered 63, against 4, 21, and 7 in the three preceding years; of these 63 cases 39 belonged to Stepney, 11 to Poplar, 3 to Hackney, 3 to Shoreditch, and 3 to Bethnal Green. The prevalence of scarlet fever showed a slight decline, 10,489 cases being notified in 1911, against 10,509 in 1910. Among the metropolitan boroughs the greatest proportional prevalence of this disease was recorded in St. Marylebone, Hackney, Southwark, Lambeth, Wandsworth, Deptford, Greenwich, and Woolwich. The number of scarlet fever patients admitted into the Metropolitan Asylums Hospitals last year was 9631, against 20,862, 16,183, and 9889 in the three preceding years; 1878 cases remained under treatment at the end of the year, against 3498, 2329, and 1574 at the end of the three preceding years. Diphtheria showed an increased prevalence last year, 7389 cases being notified, against 5494 in the previous year; this disease was proportionally most prevalent in Fulham, St. Pancras, Finsbury, Bermondsey, Greenwich, Lewisham, and Woolwich. There were 6336 diphtheria patients admitted into the Metropolitan Asylums Hospitals last year, against 6797, 5799, and 4882 in the three preceding years; 1294 patients remained under treatment at the end of the year, against 1241, 904, and 827 at the end of the three preceding years. The prevalence of enteric fever showed a marked decline last year, only 1025 cases being notified, against 1284 in the previous year. Among the several metropolitan boroughs this disease was proportionally most prevalent in Paddington, St. Pancras, Finsbury, the City of London, Poplar, and Stepney. The number of enteric fever patients admitted into the Metropolitan Asylums Hospitals was 552, against 708, 539, and 745 in the three preceding years; 76 cases remained under treatment at the end of the year, against 147, 62, and 88 at the end of the three preceding years. The greatest proportional prevalence of erysipelas occurred in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, Bermondsey, Deptford, and Greenwich. The 303 cases of puerperal fever notified during the year included 30 in Stepney, 24 in Wandsworth, 23 in Fulham, 21 in Lambeth, 17 in St. Pancras, 16 in Hackney, and 15 in Woolwich. Of the 101 cases of cerebro-spinal meningitis, 13 belonged to Islington, 11 to Battersea, 9 to Lambeth, 7 to St. Pancras, 7 to Hackney, and 7 to Stepney. Poliomyelitis has been notifiable in London since Sept. 1st, 1911, and from that date until the end of the year 69 cases were notified; of these, 9 belonged to Lambeth, and 5 each to Hackney, Stepney, Poplar, Wandsworth, and Camberwell.

The mortality figures in the table relate to the deaths of persons actually belonging to the several boroughs, and are obtained by distributing the deaths in institutions among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitution of the populations. During last year the deaths of 67,827 persons belonging to London were registered, equal to a corrected death-rate of 15·8 per 1000, the rates in the three preceding years being 14·4, 14·6, and 13·3 per 1000. Among the several boroughs the lowest corrected death-rates last year were 10·8 in Hampstead, 11·8 in Lewisham, 12·7 in Wandsworth, 13·6 in Stoke Newington, and 13·7 in Woolwich; the highest rates were 18·3 in Bethnal Green, 18·8 in Bermondsey, 19·2 in Southwark, 19·5 in Poplar, 20·4 in Finsbury, and 21·1 in Shoreditch. The deaths from all causes included 9858 from the principal infectious diseases; of these, 9 resulted from small-pox, 2570 from measles, 172 from scarlet fever, 612 from diphtheria, 1038 from whooping-cough, 144 from enteric fever, and 5313 from diarrhœa and enteritis among children under two years of age. The death-rates from these diseases in the aggregate ranged from 0·7 in Hampstead and in the City of London, 0·8 in the City of Westminster, 1·2 in Holborn and in Woolwich, and 1·3 in Lewisham, to 3·1 in Stepney, 3·2 in Finsbury, 3·6 in Bethnal Green, 3·7 in Shoreditch, and 4·0 in Poplar. Of the 9 deaths from small-pox 7 belonged to Stepney and 2 to Poplar. The 2570 fatal cases of measles were 656 in excess of the corrected average number for the five preceding years; the greatest proportional mortality from this disease occurred in Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar. The 172 deaths from scarlet fever were 298 fewer than the corrected average number; this disease was proportionally most fatal in St. Marylebone, Islington, Stoke Newington, Holborn, Finsbury, Poplar, and Deptford. The 612 fatal cases of diphtheria were 31 below the corrected average number; the highest death-rates from this disease were recorded in Hammersmith, Hampstead, Finsbury, Shoreditch, and Poplar. The 1038 deaths from whooping-cough showed a decline of 302 from the corrected average number; this disease was proportionally most fatal in Paddington, Kensington, Stoke Newington, Bethnal Green, Southwark, Bermondsey, and Deptford. The 144 fatal cases of enteric fever were 57 below the corrected average; the greatest proportional mortality from this disease was recorded in Hammersmith, Fulham, Holborn, Finsbury, and Poplar. Diarrhœa and enteritis among children under two years of age was proportionally most fatal in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, Bermondsey, Deptford, and Greenwich. In conclusion, it may be stated that the aggregate mortality in London last year from the principal infectious diseases, excluding diarrhœa, was 0·5 per cent. below the average.

PHARMACISTS AND COPIES OF PRESCRIPTIONS.—At a meeting of the Western Pharmacists of London on March 13th a discussion took place on "The Giving of Copies of Prescriptions." The general conclusion was that copies should not be given except where the pharmacist was certain that it would only be used by the patient for whom it was written, and that even for this the medical man's consent should, if possible, be obtained. In no circumstances should a copy be given in order to be passed from one person to another. Several medical men who took part in the discussion agreed that they would have printed upon their prescription forms that no copies be given. In cases where it was necessary to give a copy the meeting decided that no charge should be made for it by the pharmacist.

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar-General's weekly returns; these two columns are therefore omitted from the Table. § Poliomyelitis became notifiable in the Administrative County of London on Sept. 1st, 1911.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Staff-Surgeon: A. McCloy, to the *Victory*, additional, for disposal, and to the *Research*, for surveying season.

ARMY MEDICAL SERVICE.

Surgeon-General John C. Dorman, C.M.G., is placed on retired pay (dated March 20th, 1912).

Colonel Michael W. Kerin, C.B., to be Surgeon-General, vice J. C. Dorman, C.M.G., retired (dated March 20th, 1912).

The undermentioned Lieutenant-Colonels from the Royal Army Medical Corps to be Colonels:—Charles E. Nichol, D.S.O., vice F. J. Lambkin, deceased (dated March 9th, 1912). Sinclair Westcott, C.M.G., vice M. W. Kerin, C.B. (dated March 20th, 1912).

ROYAL ARMY MEDICAL CORPS.

The undermentioned Majors to be Lieutenant-Colonels:—Samuel G. Moores, vice C. E. Nichol, D.S.O. (dated March 9th, 1912); Thomas B. Beach, vice R. J. Copeland, placed on half pay (dated March 10th, 1912); Coryndon W. R. Healey, vice S. Westcott, C.M.G. (dated March 20th, 1912).

Lieutenant-Colonel Robert J. Copeland is placed temporarily on the half-pay list on account of ill-health (dated March 10th, 1912).

Major Walter B. Fry, from the seconded list, is restored to the establishment (dated Feb. 21st, 1912).

Lieutenant-Colonel W. L. Gray has arrived in India for a tour of foreign service. Lieutenant-Colonel H. S. McGill has been appointed Senior Medical Officer on board the transport s.s. *Plassy*, which left Bombay for Southampton on March 13th. Lieutenant-Colonel J. B. Wilson has embarked for a tour of service in Jamaica. Lieutenant-Colonel F. P. Nichols has assumed medical charge at Bodmin.

Major J. Hennessy, on completion of service in India, has been appointed to the Southern Command for duty. Major P. S. O'Reilly has been transferred from the Convalescent Depôt at Wellington to the Military Hospital at Secunderabad. Major H. S. Roch has taken up duty in South Africa. Major W. A. Woodside has joined the Station Hospital at Agra for duty. Major K. B. Barnett has been transferred from Shorncliffe to Brighton. Major P. H. Falkner has arrived home for duty from Bermuda. An exchange on the roster for service abroad has been sanctioned between Major F. W. Begbie and Major E. T. F. Birrell. Major L. Way has embarked for a tour of service in India. Major L. Humphry has been granted six months' general leave of absence home from India.

Captain R. E. Humfrey and Captain W. Benson have been appointed to the Dublin District for duty. Captain E. V. Aylen has been granted eight months' general leave of absence home from India. Captain W. C. Nimmo, from the Station Hospital at Meerut, has been appointed to the Eastern Command for duty. Captain H. B. Stack has embarked for a tour of service on the West Coast of Africa. Captain C. E. Fleming, on arrival in South Africa, has been appointed a Specialist in Ophthalmology. Captain J. J. O'Keefe has been granted eight months' leave of absence home from India. Captain E. T. Potts has been appointed to the Irish Command for duty in the Dublin District. Captain P. J. Marett has been transferred from Malta to the home establishment, for duty in the Eastern Command. Captain J. F. Grant has left Allahabad for a tour of duty in Burma. Captain A. Shepherd has joined the Station Hospital at Agra. Captain W. H. S. Burney has taken up duty at Dublin. Captain G. G. Tabuteau and Captain G. W. W. Ware have been detailed for duty on board the transport s.s. *Dongola*, which left Bombay for Southampton on Feb. 23rd. Captain P. S. Lelean has been granted five months, 26 days' general leave of absence home from India. Captain J. F. Whelan has been appointed a Specialist in the Prevention of Disease and placed in charge of the Bacteriological Research Laboratory at Jhansi. Captain R. F. M. Fawcett has embarked for a tour of service in India. Captain J. D. Richmond has taken up duty at the Military Hospital, Glasgow. Captain F. C. Sampson has been ordered to join the Scottish Command. Captain D. B. McGregor has been selected for appointment as Specialist in Electrical Science and Radiography to the Seventh (Meerut) Division. Captain T. J. Potter has joined for duty in Egypt. Captain D. T. McCarthy has been directed to proceed to Burma for a tour of service at Shwebo.

Lieutenant H. S. Blackmore and Lieutenant M. Drummond have been appointed for duty in the London District. Lieutenant R. C. Priest has been placed in Medical Charge of the Duke of Cornwall's Own Middlesex Regiment at Jalpaiguri Camp, Bengal, proceeding by route march to Lebong. Lieutenant H. V. Stanley has been placed under orders for a tour of service at Gibraltar. Lieutenant G. P. Taylor has embarked for South Africa. Lieutenant F. W. M. Cunningham has joined for duty in India. Lieutenant T. H. Dickson has been transferred from Dublin to the Military Hospital at the Curragh. Lieutenant W. T. Graham has been placed under orders to join at Oxford for duty. Lieutenant J. A. Manifold has left Glasgow for a tour of duty at Bermuda. Lieutenant J. Startin has been transferred from Kirkee to the Military Hospital at Poona.

Royal Hospital, Chelsea.—Major Herbert E. Winter, Royal Army Medical Corps, to be Deputy Surgeon, *vice* Major F. Kiddle, who has resigned that appointment (dated March 1st, 1912.

INDIAN MEDICAL SERVICE.

The King has approved of the retirement of the undermentioned officers of the Indian Medical Service: Lieutenant-Colonel Ernest Wickham Hore (dated Dec. 7th, 1911). Lieutenant-Colonel Henry Thomson (dated Feb. 1st, 1912). Lieutenant-Colonel Frank Cecil Clarkson (dated March 1st, 1912). Captain Arthur Falconer Hayden (dated Jan. 23rd, 1912).

Lieutenant-Colonel A. Coleman has taken up duty as Superintendent of the District Jail at Rawalpindi, relieving Captain C. A. Gill. Lieutenant-Colonel C. E. L. Gilbert has been granted six months' extension of leave of absence from India on the recommendation of a medical board. Lieutenant-Colonel D. T. Lane has taken up duty as Superintendent of the District Jail at Sialkot.

Major A. A. Gibbs has been appointed Medical Storekeeper to the Government of India in succession to Lieutenant-Colonel P. W. O'Gorman. Major R. H. Price has arrived home on leave of absence from India. Major H. Boulton has been appointed a Specialist in the Prevention of Disease and placed in charge of the Bacteriological Research Laboratory at Nowshera. Major H. A. Smith, civil surgeon at Agra, has been granted nine months' leave of absence home from India. The services of Major H. D. Pelle have been placed at the disposal of the Commander-in-Chief.

Captain R. T. Wells, plague medical officer at Rohtak, has been transferred to Jullundur. Captain W. W. Jeudwine has been granted two years' leave of absence home from India. Captain J. G. G. Swan has been appointed Civil Surgeon at Ludhiana, relieving Captain M. Corry, who has been transferred to Multan. Captain A. W. M. Harvey has been appointed a Specialist in the Prevention of Disease and placed in charge of the Bacteriological Research Laboratory at Dehra Dun. Captain E. T. Harris has been placed under orders for duty in Burma. The services of Captain T. M. Macrae have been placed permanently at the disposal of the Government of the United Provinces of Agra and Oudh. Captain J. E. Clements has been appointed Superintendent of the Central Jail at Montgomery. Captain H. Watts has taken up duty at Lahore as Plague Medical Officer. On transfer from Jullundur, Captain H. C. Keates has been appointed to officiate as Civil Surgeon at Dera Ghazi Khan. Captain F. C. Rogers has been granted 1 year and 14 days combined furlough. Captain C. C. C. Shaw has been appointed to officiate as Civil Surgeon in the Raipur District.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

William Archibald Miller to be Lieutenant (on probation) (dated Feb. 19th, 1912).

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st North Midland Field Ambulance, Royal Army Medical Corps: Lieutenant Thomas A. Barron to be Captain (dated Jan. 10th, 1912).

3rd East Lancashire Field Ambulance, Royal Army

Medical Corps: Kingsmill Williams Jones to be Lieutenant (dated Feb. 11th, 1912).

2nd Home Counties Field Ambulance, Royal Army Medical Corps: Lieutenant Herbert S. Hollis resigns his commission (dated March 20th, 1912).

2nd West Lancashire Field Ambulance, Royal Army Corps: Transport Officer and Honorary Lieutenant Alan H. Noble resigns his commission (dated March 16th, 1912).

3rd London Field Ambulance, Royal Army Medical Corps: Lieutenant David J. Graham to be Captain (dated Jan. 3rd, 1912).

5th Southern General Hospital, Royal Army Medical Corps: Maurice Dale Wood to be Captain (dated Jan. 4th, 1912).

2nd London (City of London) General Hospital, Royal Army Medical Corps: Lieutenant-Colonel and Honorary Surgeon-Colonel Clement Godson resigns his commission and is granted permission to retain his rank and to wear the prescribed uniform (dated March 13th, 1912).

1st West Riding Field Ambulance, Royal Army Medical Corps: Lieutenant Francis Darlow to be Captain (dated Jan. 24th, 1912).

Attached to Units other than Medical Units.—Captain Thomas Brushfield resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated March 16th, 1912). Captain James K. Patrick resigns his commission (dated March 20th, 1912). Lieutenant William T. Storrs resigns his commission (dated March 16th, 1912). Lieutenant James A. Raeburn resigns his commission (dated March 16th, 1912). Major Thomas E. Stuart resigns his commission (dated March 6th, 1912).

For Attachment to Units other than Medical Units.—Gerald Lantsbery Bunting to be Lieutenant (dated March 6th, 1912). Lieutenant Richard Christopher Clarke, from the Territorial Force Reserve, to be Lieutenant (dated Jan. 28th, 1912). William Frothingham Roach to be Lieutenant (dated Dec. 1st, 1911). Lieutenant Haldinstein David Davis, from the 2nd London (City of London) Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated Feb. 12th, 1912).

VOLUNTEER FORCE.

Uppingham School Cadet Corps: Acting Surgeon Harry L. Smith resigns his commission (dated March 13th, 1912).

THE TERRITORIAL DECORATION.

The King has conferred the Territorial Decoration upon the undermentioned Officers of the Territorial Force, who have been duly recommended for the same under the terms of the Royal Warrant dated August 17th, 1908:—

Infantry.

5th Battalion, The Prince of Wales's Own (West Yorkshire Regiment): Surgeon-Captain Ernest Solly, Retired List.

Royal Army Medical Corps.

Major William Lloyd Edwards (deceased). Major David Durran, attached to the 5th (The Sutherland and Caithness Highland) Battalion, Seaforth Highlanders (Ross-shire Buffs, The Duke of Albany's).

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

In the March issue of this journal the first place is given to an appreciative sketch of the life of a Royalist army surgeon by Major H. A. L. Howell. Richard Wiseman, the subject of the memoir, was serjeant-surgeon to Charles II. and a "great practical surgeon of his day," who "in a drunken age was a water-drinker, and at a time when licentiousness was rampant, we have every reason to believe, led a moral life." He was a good Latin scholar, and wrote several books, his treatises dealing with tumours, ulcers, diseases of the anus, king's evil, wounds, gunshot wounds, fractures and luxations, and lues venerea. In connexion with this last-mentioned disease it is interesting to note that a grateful patient settled an annuity upon Wiseman equal to £120 a year in modern money. Incidentally the memoir contains a story illustrating the power of the imagination. Wiseman had used a red ribbon as a tourniquet previous to cutting off the hand of a soldier. After the surgeon had left the patient he was hurriedly recalled because the patient was in great pain owing to the pressure, as he thought, of the red ribbon. "I was at first surprised to think I should leave the Ligature upon his Arm," said Wiseman, "that being a sure way to bring a Mortification upon the Part." After being shown the ribbon which was now in the operator's pocket, the patient "laught and was from that time in ease." A reproduction of the portrait of Wiseman in oils which is in the Royal College of Surgeons, London, forms a frontispiece to the article. Major G. E. F. Stammers and Captain G. I. Davys, I.M.S., deal with the subject of Apyrexial Malaria Carriers, and Major E. W. W. Cochrane contributes a paper on A Small Epidemic of Typhoid Fever in Connexion with Specifically Infected Flies. A short article on the Effect of Physical Training on the Pulse-rate, by Captain J. A. Black, will be read with attention, as will also the first part of Practical Hints on Marching and Health on Active Service, intended for the instruction of young soldiers, written by an ex-soldier, G. Fahey, late 88th Connaught Rangers. This paper is based on an experience of 19 years in the ranks.

THE MILITARY SURGEON.

The first 35 pages of the February number are devoted to a detailed and appreciative account of the magnificent International Exhibition of Hygiene at Dresden, by Medical Director (Surgeon-General) H. G. Beyer, U.S. Navy, United States delegate to the exposition. A special word of praise is given to the completeness of the exhibit in the British Section, of whose success it is said, "the British people may well feel proud." The untiring energy of the secretary, Mr. H. W. Armit, and his daily demonstrations are warmly praised. An exhaustive paper, a Study of the Foot and Footwear, by Captain F. W. Weed, Medical Corps, U.S. Army, discusses the evolution of the foot as seen, first in the Simiadæ, then in less civilised, and in the more civilised races of men. It traces the development of sandals, shoes, and boots to the present day, details the principles and practice of fitting boots to feet, and insists on the damage done by stockings that are too tight. This paper should be read by all young medical officers. The American army finds that salvarsan alone is sufficient for the treatment of primary and tertiary lesions, but mercury must also be used in secondary cases to assist in the final cure.

CHANGE OF DESIGNATION IN THE ADMINISTRATIVE RANKS OF THE ROYAL ARMY MEDICAL CORPS.

It is announced that the titles of Principal Medical Officer, Administrative Medical Officer, and Staff Officer to the Principal Medical Officer of a Command are about to be discontinued. In future these officers are to be called "Deputy Director of Medical Services," "Assistant Director of Medical Services," and "Deputy Assistant Director of Medical Services" respectively. This change in nomenclature brings the medical services of the army into line with those of supplies and transport and other departments.

A DRAWING-ROOM meeting on behalf of the Ragged School Union and its work among poor and crippled children will be held on Tuesday next, March 26th, at 3.30 P.M., at 10, Queen Anne-street, Cavendish-square, W., with the permission of Sir Alfred and Lady Pearce Gould. The Rev. Prebendary Webb-Peploe will preside.

UNIVERSITY OF LIVERPOOL.—The Council has decided, on the recommendation of the Medical Faculty, to found a chair of bacteriology at the University. Negotiations have been in progress for some time in regard to the bacteriological work of the city previously carried on by the late Sir Rubert Boyce, professor of pathology at the University. The new professor will hold the dual post of professor of bacteriology and city bacteriologist. The University will place at his disposal, in his capacity of city bacteriologist, accommodation at the University. The appointments to the two posts will depend upon each other, the resignation of one leading to the resignation of the other. The subject of bacteriology has so advanced in importance of late years that it has become a necessity for the University to secure the services of a trained bacteriologist. The present arrangement will be an advantage both to the city and to the University, and the completion of the negotiations is a further evidence of the readiness with which the councils of the two bodies work together to their mutual advantage. The two chairs—the vacant one of pathology and the new chair of bacteriology—will be filled up without further delay, and next session it is hoped the newly-appointed professors will enter upon their respective duties.

Correspondence.

"Audi alteram partem."

MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editor of THE LANCET.

SIR,—With your kind permission I should like to draw the attention of the readers of THE LANCET to certain improvements which are being effected in connexion with the Museum of the Royal College of Surgeons of England. The following letter, which is self-explanatory, is being issued by the President of the College to ophthalmic surgeons throughout the country. It is possible, however, that medical men who are not specially in ophthalmic practice may be able to help with the object mentioned in the letter.

Royal College of Surgeons of England, Lincoln's Inn-fields, London, W.C., 25th March, 1912.

DEAR SIR,—The Council of the Royal College of Surgeons of England have lately resolved to revise completely that part of the Museum which illustrates Injuries and Diseases of the Eye, and has entrusted the revision to Mr. Stephen Mayou, F.R.C.S.

The methods of preservation and mounting of specimens have improved so much since the present collection of eye preparations was made by Mr. Charles Bader in 1860-1862 that it will be necessary to replace the majority of existing specimens.

As President of the College may I ask you to assist the Council by presenting to the Museum such specimens as may help to give a complete representation of the Pathology of the Eye and of the various structures accessory to the function of vision?

Preparations should be forwarded to the Conservator of the Museum, who will acknowledge their receipt and report on them if desired.

I am, Dear Sir, Yours faithfully,
(Signed) R. J. GODLEE, President.

The Council of the College has also resolved to establish a Medico-legal Collection in connexion with the Museum, there being at the present time no standard collection in England. The scheme of classification which is to be adopted for this collection is that elaborated by Sir Henry Littlejohn and Professor Harvey Littlejohn in connexion with the Museum attached to the Department of Forensic Medicine in the University of Edinburgh. The scheme of classification is as follows:—

I. Specimens illustrating sudden or unexpected death from natural causes—e.g., conditions of the heart, brain, stomach and intestines, larynx, &c. (latent disease).
II. Deaths from mechanical violence: (*a*) Rupture of organs; (*b*) wounds—contusions, incised (cut-throat), stabs, lacerated, wounds of genital organs; (*c*) injuries and results of violence to brain; (*d*) fractures—skull, long bones, &c.
III. Death from asphyxia: (*a*) Drowning, (*b*) hanging, (*c*) strangulation, (*d*) choking, (*e*) overlaying—enlarged thymus gland.
IV. Specimens illustrating identity and post-mortem condition—e.g.: Tattoo-marks, malformations, finger-prints, foot prints, post-mortem digestion of stomach, post-mortem discolourations and changes, post-mortem injuries, adiposis, mummification, &c.
V. Specimens illustrating: pregnancy; delivery—injuries, &c.; abortion; rape, virginity, &c.
VI. Death from burns.
VII. Death from firearms.
VIII. Infanticide.
IX. Effects of poisons.
X. Specimens of all chief poisons.
XI. Weapons of various kinds. Photographs. Microscope slides of various kinds in relation to all the above.

There are already in various parts of the Museum specimens which illustrate some of the sections included in the above list, but as regards the majority of these the College must depend on the public spirit and generosity of medical men. This letter is written in the hope that your readers may be induced to help in building up this most needful collection.

The Conservator of the Museum will gladly answer inquiries regarding the projected Medico-legal Collection and acknowledge the receipt of specimens.

There is another department of the Museum which is altogether dependent on medical men—viz., that which illustrates the development and growth of the human embryo and fœtus. In recent years the methods of preservation of such specimens have become so much more satisfactory that it will be necessary to replace some of the present specimens and to add many others.

The Conservator will gladly acknowledge the receipt of such specimens and give a descriptive account of them if the donor should so wish. It is of the utmost importance that the full history relating to the age of such specimen should be known.

You will render the Museum of the College a service if you will be so good as to bring these matters before your readers. I am, Sir, yours faithfully,

ARTHUR KEITH,
Conservator of the Museum of the Royal College of Surgeons of England.

March 20th, 1912.

THE CAUSATION OF TOXIC SYMPTOMS FOLLOWING THE ADMINISTRATION OF SALVARSAN.

To the Editor of THE LANCET.

SIR,—Although questions of priority have little interest to anyone except those immediately concerned, we hope that you will find space for the following remarks.

In a letter printed in your last issue we think Mr. Bayly does us a slight injustice in stating that our work confirms that of Major Gibbard, Major Harrison, and Lieutenant Cane. Major Gibbard and Major Harrison and their collaborators will of course recognise that we do not wish to minimise the value of the investigations which they have conducted from the beginning of the salvarsan era in England if we call attention to the fact that our original publication was headed "Eingegangen bei der Redaktion am 20. September, 1911."

Again, we take some exception to Mr. Hort and Dr. Penfold's statement that we "resuscitated Wechselmann's theory." We have always given Dr. Wechselmann the fullest credit for having been the first to call attention to this subject, but we cannot help pointing out that we have borrowed nothing from his writings except the reference to the work of Bingel on "salt fever." Dr. Wechselmann's first paper containing this reference was published in April and his conclusions regarding the toxicity of saline were incorrect. We immediately confirmed and corrected Bingel's work on man on a more extensive scale and had already demonstrated the method of eliminating the toxicity of distilled water before the publication of Dr. Wechselmann's second paper in July. Indeed, we were able to include some account of this work in our book on syphilis which was in the hands of the booksellers in October. This note was written before the publication of Dr. Wechselmann's second paper.

Further, we should like to point out that Dr. Wechselmann and others have only demonstrated clinically that salvarsan dissolved in freshly distilled water is non-toxic to man. They *inferred* that the toxicity was due to some bacterial product in the water. We, however, believe that we alone have traced the cause of these phenomena experimentally, producing direct, as opposed to indirect, evidence, and that we alone demonstrated clearly the difference in the reaction to salvarsan of acute and chronic syphilitics, thus clearing up several points which had been held as objections to what we will call "Wechselmann's theory."

Mr. Hort and Dr. Penfold will take exception to some of the phrases we have used above. The origin of their letter appears to be the reference we made to their work in our paper in THE LANCET. We must apologise for the seeming discourtesy of a footnote, but we much regret that our paper was in the press before the meeting of the Pathological Society took place. Nothing in our paper should be taken as a reply to anything Mr. Hort and Dr. Penfold may have published. We readily confess that we do not fully understand the intricacies of their work, and therefore we cannot enter into any profitable discussion of it. A help to our understanding will be the publication of the experiments which they have made in support of their views. A cursory description before a medical society cannot be accepted as "publication" of experiments. Few can follow the argument, and the author cannot be held to any one statement. Of still less value is the account of these meetings in the papers. In the report of Mr. Hort and Dr. Penfold's paper published in THE LANCET, no detail was given, and the Proceedings of the Pathological Society are not yet published; where, therefore, can we find verification of their present statement: "He (Dr. McIntosh) confessed that he had not carried out the control experiments we had shown to be essential"? We strongly protest against such confessions being put into our mouths. Mr. Hort and Dr.

Penfold have put a construction upon the conversation which was certainly not intended.

The expressions "proved to demonstration" and "indisputable fact" which appear in their letter in reference to their work leave us cold. They indeed imply a great confidence, a confidence which we hesitate to place in our own researches; nevertheless, we had thought that we had "proved" the opposite, and, so far as is possible at present, we must dispute their "indisputable fact." We repeat that we "await the publication of precise technical details" or an indication of the site if they have already been published.

We are, Sir, yours faithfully,

J. McINTOSH,
P. FILDES,
H. DEARDEN.

London Hospital, E., March 19th, 1912.

THE INTESTINAL FLORA.

To the Editor of THE LANCET.

SIR,—Dr. Edwin Goodall, in your issue of March 9th, calls attention to the *résumé* of my researches in my article of Feb. 24th.

I think that judgment should be withheld until all the facts are known. My article *in extenso* will appear soon in the *Centralblatt für Bakteriologie*, 1 Abt. Orig. Bd. 62, and I shall then be glad of any just and impartial criticism. I may point out here, however, that Dr. Goodall is at fault in expressing astonishment that indol and its congeners are produced in the colon. It is surely a fact, which anyone who has seen a preparation of fæces has noticed, that the intestinal flora of an adult man is to a large extent composed of microbes which are known to form these substances *in vitro*. That these same substances are produced *in vivo* is obvious, for in the colon there are decomposition products of the tryptic digestion and absence of sugar. There are, moreover, other facts which cannot have escaped so careful an observer as Dr. Goodall. 1. It is a recognised fact, to be found in every text-book of physiology, that in fistula of the ileum the discharge has never been observed to give the reactions of indol, although as much as 1000 grammes have been used in the investigation. 2. In the process of tryptic digestion, carried out under aseptic conditions, E. Fischer and Aberdhalden were never able to detect these substances. When, on the other hand, the digestive process was accompanied by bacterial growth indol and its allies were produced. 3. As Dr. Goodall knows, the stools of the infant at the breast never give the indol reaction. The reason of this is that the intestinal flora of these infants includes none, or only a negligible number, of the indol-producing organisms. 4. In a series of observations on the bat, carried out in collaboration with Professor Metchnikoff, Berthélot, and others (*Annales de L'Institut Pasteur*, 1909), it was shown that in this animal, which has an extremely short colon, the distillate from the stools contained neither indol nor its allies. 5. It is also a matter of general knowledge that when one changes the intestinal flora for the better, the sulpho-conjugates sensibly diminish and in some cases almost disappear, as I can demonstrate on myself.

These facts leave no doubt that indol and its allies are formed by the microbes of the large intestine. Now there is still in question whether the liver suffers from this condition of intestinal intoxication. In this connexion the amount of sulpho-conjugates in the urine affords valuable testimony. In the breast-fed infant there is no evidence of the formation of these substances, but as soon as feeding by cow's milk is commenced intestinal putrefaction begins and sulpho-conjugates appear. Further, in the normal adult their proportion increases, and in constipated subjects becomes augmented even to four times the normal amount (*vide* Combie: "Sur l'Auto-Intoxication Intestinale"). It is a known physiological fact that the sulpho-conjugates are formed in the liver, and it follows that the excessive production of indol and its allies in the intestine and their absorption by the portal system must increase considerably the work of this organ, which is responsible for their elimination.

Dr. Goodall is further astonished that this flora is harmful. On this assertion, which is a consequence of the facts that I have established, I do not propose to waste words. This flora is dangerous, for it is admitted that an excess of indol in the intestine is associated with the symptoms of trouble of intestinal origin. That microbes undergo autolysis in the colon of constipated individuals there can be no doubt. In the cases operated on by Mr. Lane it was found after the operation that certain microbes had appeared in the stools which previously were absent, and it is entirely within reason to conclude that these microbes were part of the flora of the colon originally.

Dr. Goodall reproaches me for my hypothesis of the rôle of these substances of microbic origin—viz., that they act on the nerve-plexuses of the intestinal mucosa. However, the part played by the nervous system in the intestinal activities is well established by Cannon, whose excellent monograph, published a short time ago, Dr. Goodall probably knows. Perhaps I may be permitted to submit to him this question: If these substances, which I have never spoken of as toxin, are not directly or indirectly harmful, how does he explain many of the phenomena to be observed in connexion with the colon? I admit, however, that this hypothesis will have to be elaborated. My own work on chronic intoxication by intestinal bacteria is only the beginning. *Ars longa, vita brevis.*

I am, Sir, yours faithfully,

Russell-square, London, W.C., March 16th, 1912. A. DISTASO.

THE VALUE OF PNEUMOCOCCUS VACCINE IN THE TREATMENT OF PNEUMONIA.

To the Editor of THE LANCET.

SIR,—The kindly and courteous criticism of my paper in THE LANCET by such a distinguished authority as Sir R. Douglas Powell demands on my part an immediate reply.

The first question is a most important one, and relates to the superiority or otherwise of an autogenous vaccine as opposed to a homologous or stock vaccine. On strictly scientific grounds a vaccine ought to be autogenous, and especially in the case of the pneumococcus, which is not by any means a constant organism either as regards strain or virulence, but the difficulty in preparing an autogenous vaccine in a case of acute pneumonia is very great, and could only be done by puncturing the lung, as Sir Douglas Powell points out, at great hazard. We are therefore compelled to use a stock vaccine, the dose of which need not be so carefully regulated as in the case of autogenous vaccines, and which in my hands has proved most satisfactory. With regard to the stage of the disease at which it ought to be injected my experience of a large number of cases of pneumonia teaches me that the earlier it is given the better, and it is now my practice to give a good dose immediately the disease is recognised. Of course, in many cases of pneumonia which are running a favourable course vaccine is not necessary, and I thoroughly agree with Sir Douglas Powell as to its value in those cases where a prolonged pyrexia occurs without pus formation.

The criticism of my mortality table is quite warranted, and I quite admit that a death-rate of 16 per cent., based on 207 cases of pneumonia treated with vaccines, is not any great advance on the results obtained by other methods of treatment. I would, however, like to express my belief that in the future, with further experience and knowledge of vaccine, this death-rate will be still further reduced.

With regard to the dosage, I take it the object of giving vaccine is to produce an immunity in the blood against the pneumococci and stimulate the formation of anti-pneumotoxin. The doses which we have been accustomed to give are in my opinion too small, and any immunity which is produced is of too short a duration and of a temporary character. For this reason, and bearing in mind that we have never observed any reaction or ill effects from its use, we have been encouraged to largely increase the dose from 50 to 100, or even 150, millions in a serious case.

I cannot see any reason why acute pneumonia should necessarily run a course of six, seven, or eight days, and we have recently treated two acute cases in hospital with continuous injections of vaccine (50 millions every four hours) with the happy result of aborting the attack, bringing the temperature to normal, and relieving the patients of the distress due to respiratory embarrassment and toxic absorption. The physical signs of consolidation were not much influenced by the treatment, but there was a complete absence of toxæmia. These cases will shortly be published, and I feel sure that the treatment of pneumonia will in the future be directed to

aborting or cutting short an attack rather than in guiding the disease for a stereotyped number of days to a crisis, by which time the patient is often poisoned by toxæmia and his heart paralysed by exhaustion. By the administration of anti-toxin we abort an attack of diphtheria, and in my judgment we must use every endeavour to stop an attack of acute pneumonia. I take it that the "crisis" in pneumonia is the exact time when a sufficient amount of anti-pneumotoxin has been formed in the blood automatically, to counteract the toxins of pneumococci.

If we can bring about that result early in the disease by the use of vaccines or serum we will save an enormous amount of suffering and greatly reduce the mortality from the disease which is so aptly described by Osler as "the Captain of the Men of Death."

I am, Sir, yours faithfully,

Liverpool, March 18th, 1912. NATHAN RAW.

A NEW GALACTAGOGUE.

To the Editor of THE LANCET.

SIR,—It is well known that the food of an animal and the season of the year modify the quantity and the quality of the milk secretion. Goats' milk, for instance, is said to be astringent after the animals have eaten the leaves of the oak or pine trees, and to act as a gastric sedative if the wild hellebore is made a part of the diet.

It was customary in the old days to prescribe the diet, not only for the infant or invalid, but for the animal from whose milk the patient was to be fed. An instance occurred in the practice of the famous Italian physician of Milan, Jerome Cardan, when about the end of the sixteenth century he was called to Scotland to attend Mary Queen of Scots. The Archbishop of St. Andrews, John Hamilton, whose brother was heir to the throne of Scotland, never had robust health, and was at that time suffering from some lung disease, probably phthisis. Advantage was taken of Cardan's presence in Edinburgh to ask him to attend on and prescribe for the archbishop. He treated him with beef-juices made of blood serum; chicken broths flavoured with cinnamon, wine and ginger; but milk was the "sheet anchor" in the dietary. The savant contended that milk kept the stomach open and cleared the brain, and he ordered the archbishop to drink from two to four pints of ass's milk, either all at once or in several doses with no greater interval than an hour. The ass was treated also. The animal was ordered to be provided with mild herbs, such as mallow, juicy beetroots, rose blossoms, as well as fresh corn and barley, and the mother and foal were ordered to run together freely in a meadow daily. This prescription gives a hint to those interested in milk feeding of consumptives to-day.

The turnips given to a stall-fed cow impart a flavour to its milk and to the cream and butter; a similar thing occurs when the animal is fed with new clover. Leeks, onions, garlic, and other members of this group taint the milk, their active principles being secreted by the milk gland, as in the cases of oils of dill and aniseed. Before the days of artificial foods physicians were careful to order milk derived from one cow, the animal being specially fed, and in some parts of the country this is not now departed from.

Beans, peas, and lentils have long been held in esteem for increasing the milk-supply. Hippocrates recommended cabbage; Paul of Aegina the carrot, beet-root, cresses, and chicory, for this purpose. Professor Tarnier's favourite galactagogue was malt, and farmers still use the draff of the brew-house for cow feeding. Dr. Carron de la Carrière, of Paris, speaks highly of the old-fashioned goat's-rue, or as others call it, galega, formerly much used in medicine as a diaphoretic and stimulant. He has observed, when this is given to the suckling mother, the infant increases in weight and rests and sleeps better.

Our Pharmacopœia has little to offer the medical practitioner or midwifery nurse in the way of milk-inducing agents. Recently, a preparation of the cotton seed has been tried with much success, increasing the mother's milk both in quantity and in fat and casein. The product has been minutely described by Dr. Ballerin, of Paris. Cotton seeds are reduced to a fine powder, the oil and resinous matters are extracted by ether and benzine, and the active principle obtained by infusing the residue, and thereby getting rid of the colour and the odour. The resultant liquid is concentrated *in vacuo* and the blocks pulverised. This powder is free from cellulose, oil, and other indigestible products. It has no toxic properties. The active principle, so far as milk-producing properties is concerned, is edestine. The product has been administered to domestic animals, with the result that the quantity of milk increased by 30 per cent., and the fats and solids in corresponding proportion. The same results have followed its administration to lying-in or suckling mothers. Several cases of this nature have come under my personal observation. For example, a lady with her second child noticed at the fifth month that the breasts were becoming soft, and the milk diminishing in quantity. This cotton-seed powder produced a large accession of milk, and by continuing its use she was able to go on nursing without further trouble. The following is rather a severe test. A mother who had never been able to suckle more than four months has been able to continue for nine months, the baby being plump and thriving, to the great delight of the mother. The milk-supply has been abundant throughout.

Bearing in mind that artificial feeding is the most potent cause of the maladies of early infancy, and the chief factor in the production of infantile mortality, the importance of a reliable galactagogue can scarcely be over-estimated.

I am, Sir, yours faithfully,

Goswell-road, E.C., March 9th, 1912. W. LAUZUN-BROWN.

FUNGI FOUND IN TROPICAL BRONCHO-MYCOSIS.

To the Editor of THE LANCET.

SIR,—In my letter on this subject I pointed out an error that Dr. A. C. E. Castellani had made in describing endomyces albicans as liquefying gelatin. The only organism of that name is E. albicans (Vuillemin) described in 1893 (*Comptes Rendus de l'Académie des Sciences*), and again by Goedelst and Vuillemin ("Les Champignons Parasites," 1902, p. 38), when they distinctly state: "La gelatine n'est jamais liquefiée." Dr. Castellani remarks that anyhow there are a number of organisms concerned in thrush, and that some of them liquefy gelatin. That seems beside the point, while he neglects the species described by M. Vuillemin, a distinguished French mycologist of world-wide reputation.

In apology for my venturing to express an opinion at all, I may point out that in his original communication Dr. Castellani (1) admits he has no evidence that his saccharomyces is a saccharomyces; and (2) offers no evidence that his endomyces are endomyces. (3) Finally it appears probable there are still two slips in the fermentation table—for instance, one organism ferments (A.G.) raffinose, but no disaccharid, and another ferments raffinose and saccharose, but not levulose. These are abnormal and in need of confirmation.—I am, Sir, yours faithfully,

Acton, W., March 18th, 1912. ROBERT CRAIK, M.D. Glasg.

THE BED ISOLATION OF CASES OF INFECTIOUS DISEASE.

To the Editor of THE LANCET.

SIR,—In the course of such unfavourable comments as have hitherto been made on the plan of "bed isolation" in dealing with infectious diseases—which, by-the-bye, have, so far as I know, only issued from those who have not given it a trial—the responsibility for its origin has been pretty definitely allotted to myself. I shall be glad therefore if you will be good enough to allow me to make some reference to the encouraging results reported by Dr. C. Rundle and Dr. A. H. G. Burton, in their excellent paper in THE LANCET of March 16th. There is just one point with which the authors are doubtless quite familiar, but which is not perhaps emphasised sufficiently by them to arrest the attention of those who have not read the original papers on the subject. I mean the paramount necessity of the routine cleansing (with a view to minimise possible aerial dissemination, as well as to effect other ends) of the mouth and throat, if not the nose, in all cases. At Mortlake every patient used on admission to be given a separate spray producer and a new tooth-brush. The tooth-brush was used at least twice a day, and the atomiser, with an oily disinfectant, every four hours at first.

Of course (in the case of small hospitals especially) there are many contingent advantages in the ado ption of the method of bed-isolation, but, as I have tried to point out, in a recently published volume of essays, it is a method that

depends on principles that should be always applied in dealing with cases of infectious disease, whether kept at home or sent to hospital. The use of symbolic barriers, like the red cord, or material barriers, like the glass partition, has in private practice an analogue in the fetish of the wet sheet. In all these cases attention is directed to a non-essential symbol, and the success or non-success of the barrier and cubicle systems depends not on the barrier or wall so much as on the incidental attention paid to hands and articles.

The method of "bed isolation," then, is nothing more than the carrying-out of the principles of asepsis and antisepsis in the case of certain diseases. The details are to be modified, if necessary, as we gain knowledge of the differences in the mode of transference of the different viruses. But certain principles are suitable for application in all cases, and should be applied whether the patient is at home or in hospital, in a special ward or in a "mixed" one.

I am, Sir, yours faithfully,

Welbeck-street, W., March 16th, 1912. F. G. CROOKSHANK.

CAVITATION OF THE LUNGS IN YOUNG INFANTS.

To the Editor of THE LANCET.

SIR,—The instances of hæmoptysis occurring in young infants referred to by Mr. P. Carruthers Watt and Sir R. Douglas Powell in the issues of THE LANCET for Jan. 27th and Feb. 3rd of this year are of some interest from the standpoint of the presence of cavitation due to tubercle in the early months of life. I have seen a large cavity in the lower lobe of the left lung crossed by a fibrous band at the age of 5 months. Death was due to tuberculous meningitis. In another case, of a child, aged 8 months, a cavity of the size of a walnut was present in the upper lobe of the left lung.

Interesting though this cavitation is at so early an age, whether complicated or not by hæmoptysis, there seems to me to be a danger that its presence should be taken as evidence of the not uncommon occurrence of phthisical cavities of chronic character in children. Such cavities are, in my experience, of great rarity in childhood. Needless to say, I speak especially, not of the early months, but of the early years of life. The cavities above referred to occurring in infants, like tuberculous cavities occurring later in the lungs of older children, were acute or subacute in character due to the rapid breaking down of caseous broncho-pneumonia.

Although well known, it is a fact which is deserving of emphasis in these days of examination of school children, that chronic cavities in the lungs of children are almost invariably bronchiectatic in nature. It may be interesting to add that considerable degree of dilatation of the bronchial tubes may be present under the age of one year. In a child aged six months I have seen half of the lower lobe of a lung affected with broncho-pneumonia thickly studded with dilated bronchial tubes, some measuring a quarter of an inch across. Broncho-pneumonia, especially apparently the broncho-pneumonia of measles, is the main cause of dilatation of the bronchial tubes in children.

The frequent reference in medical papers to the widespread infection of children with tubercle tempts a further remark that these references not uncommonly appear to manifest confusion as to what is meant by infection by tuberculosis. Some writers appear to assume that frequent infection of children with tuberculosis proves the frequency of chronic pulmonary tuberculosis. In children tuberculosis of the lungs is acute or subacute. During childhood the lungs appear to exhibit little or no power to prevent the rapid spread of infection within them, and death occurs before many months have passed.

I am, Sir, yours faithfully,

Sidcup, Kent, March 15th, 1912. THEODORE FISHER.

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—In November last year you published a letter of mine in which I proved from the figures of my own practice that contract work paid for by premium per head and salary was much more lucrative than ordinary private work paid for by fees per visit. The publication of my discovery made but slight impression at the time, and apparently it failed to convince many of your readers that what was a particular truth as regards my practice was, indeed, a general truth of all practices. My contention then and now is that payment by premium gives better returns than payment for work done, and that in view of the falling sickness-rate the premium method is the only means by which our incomes can be maintained. I also tried to show that premiums can be adjusted to clients of all grades of income and of all degrees of ill-health. Throughout the controversy on the Act nothing has been more astonishing than the wide differences in the estimates made by various correspondents as to the equivalents of the two methods. Scarcely any two writers have agreed as to what premium *per capita* would be equivalent to a given fee per visit, and this is the very key of the whole position. It is practically agreed that if the Act would give us half-a-crown a visit or its equivalent premium we should be content. I think we are unanimous on that point, and it is about the only point on which there is complete agreement. The disagreement has arisen through the erroneous methods employed to find the equivalent in premium to this fee of half-a-crown per visit. Estimates have varied from 25*s.* to 6*s.*, the latter figure being the sum offered us under the Act. In my November letter I thought that 8*s.* 6*d.*, the premium paid by the Post Office, should be the amount paid under the Act, and we know that the Association has now fixed its demand on that sum. All this confusion of opinion has arisen from the absence of statistics. Actually the only trustworthy and useful figures before us are the returns of the societies, which give us the number of members and the total sick days paid for by them. But these returns do not give us the number of visits paid by the doctors attending, nor do they give us any idea as to the number of visits each sick member received. Sick days have the vaguest relation to sick visits. Practically no one keeps a record of the work he does for his clubs. Another difficulty in accepting the various estimates as equivalents arises through the knowledge that sickness-rates vary in different districts, at different times of the year, in different years, in different industries, in the two sexes, and at different ages. Not only does the sickness-rate vary, but so also does the personality of the doctor who makes the visits. So that every attempt to solve the difficulty has but added to the confusion—so far. Clearly the truth lies in this, that any estimate must depend on and vary with the personal equation—no two estimates could be exactly alike, because what I may call the "visiting habits" of no two doctors are alike. An average must be struck. That is what the Association has done. Is it high enough? Every general practitioner can put it to the test, in a way I will presently demonstrate.

I have within the last 24 hours lighted on an idea which to me seems likely to help us to solve this problem of equivalents. As I have said already, the equivalent arrived at will differ, slightly it may be, perhaps only fractionally, in every two practices. But every medical man would like to know what premium per head would give *him* the same return of income as his present visiting fees do. He is at a loss in his search for truth in all the maze of conflicting views that confront him at meetings and in the journals week by week. My plan will enable him to get very close to the mathematical truth. He will be able in half an hour to find how near to the average 8*s.* 6*d.* struck by the Association comes his own way of doing his work while charging for it at the rate of 2*s.* 6*d.* per visit.

Every practice contains so many clients at any given moment. A client is a person who either is now, has been, or may be a patient. What we want to know first of all is how much each client pays in the year to the doctor of his choice. Now here I must point out that no town doctor whatever, and very few country doctors, know how many clients they have, and herein is the root of many fallacious estimates. A client may never actually be a patient at all. For instance, an old client of mine was found dead in his back yard—he had never had a bottle of medicine in his life. If he had been a private client this practice would have derived nothing from him—there are such cases in every practice no doubt—but as a matter of fact this man as club client had been paying 6*s.* a year for 40 years to the practice. If, again, this man had lived in a town, and had not been a member of a club, no doctor would necessarily have known whose client he was. I make this illustration to show that very few doctors can really be sure how many clients they possess, and also to demonstrate the probability that there are thousands of people walking

the streets to-day, clients of no one knows whom. They are non-paying now, but will be premium-paying under the operation of the Act. So it comes to this, that no town doctor can tell how many clients it requires to furnish his income. But every doctor, of course, knows who have been, who are, and who are not his patients. And as one can see how impossible it is to arrive at the total of his *clientèle*, I have had to adapt my plan to the ledger as it stands now, and not as it may stand through the next five years.

We want to know how much we get from each client of our practice now while he is a private person, so that we can compare this sum with the amount we are demanding (8*s*. 6*d*.) from the same client when he becomes an insured person. Does every working-class private client of our practice now yield us as much as 8*s*. 6*d*. per annum? No one can answer, because no one knows all his clients. All that can be done in this direction is to see from one's books if the working-class *patients* have, over a period of four or five years, paid as much by fees as they would have done if they had each been paying us a premium of 8*s*. 6*d*. per annum. All that is necessary is to take from the ledger the names of 100 individual working-men patients *now alive*, add up what they have paid to the practice in 1908, again in 1909, 1910, and 1911. They must be the same individuals in each count. Then by making a total of the whole sum received from them in the four years and dividing it by 400 we get the average payment of each working-man private patient per annum. I venture to prophesy that every doctor who takes the trouble to make this simple investigation will find that the figure 8*s*. 6*d*. is on the safe side.

I should point out that this plan of taking patients' names instead of clients' (which one would do if one could) is really in my disfavour, inasmuch as many of one's clients are not on the ledger at all, are now paying nothing, but are soon to be insured and will pay a premium. Also one would get a truer equivalent with a larger count—say 500. The same plan can easily be carried out with other classes of patient. For instance, one might wish to know what premium would tally with a charge of 3*s*. 6*d*. per visit or a 5*s*. visit and so on.

In making up the count one ought in fairness to add to the list of patients a small percentage for clients who hitherto have not required service, but who are nevertheless potential patients of the practice and will pay premium under the Act. I would suggest 97 names of actual patients and add 3 for clients known or unknown and who pay nothing at all, of course, during the four years. It is not probable that the worked out average sum per head received per annum will be the same in any two practices. There will be fractional differences accounted for by variation in propensity to visit of different doctors—that must be expected.

I trust a good many of your readers will take the trouble to utilise my plan and bring forward their results. The more results we have the more readily shall we get an all-round general and true average premium for every rate of fee.

I am, Sir, yours faithfully,

B. HALL, M.B. Lond.

West Mersea, Colchester, March 11th, 1912.

To the Editor of THE LANCET.

SIR,—The medical profession, almost to a man, looks on the National Insurance Act with disfavour, and we are still searching for one beneficiary under the Act who has desired it, or, now that he has got it, is satisfied with it. Those of us, however, who have read Dr. Brend's recent articles on the subject[1] must have come to the conclusion that they formed one of the most carefully reasoned analyses of the Insurance Act which have so far appeared. Also, that there is something to be said for some of the views of the Chancellor of the Exchequer. Dr. Brend has apparently had the time and the ability to make a complete study of the Act in all its bearings, a thing which can hardly be said of most of the writers on the subject in medical and other papers.

At the same time, I have been a little bewildered, for if his statements are correct it is clear that the effects of the Act will not be so disastrous as we have hitherto supposed. Dr. Brend shows that the remuneration suggested is an increase upon existing fees, and that payments can be made to medical men from several other sources without touching upon the 6*s*. for medical benefit. Are these facts? The general practitioner is not in a position to estimate the effects of the Act, and some of the letters which have appeared in the press anticipating the ruin of medical practice have quite obviously been based upon errors. Dr. Brend points to the paucity of published statistics, but, as I have before suggested, cannot the British Medical Association give us some authoritative information? It has been collecting such information since the Bill was introduced, or, if not, it should have been doing so. What we want to know is this: What is the average amount which each person who will be insured under the Act pays for medical attendance now, and how many times does he see the doctor in the course of the year?

We may be quite sure that full information on these points is in the possession of the Chancellor of the Exchequer. But until we possess it ourselves, based upon full and reliable figures, we have nothing upon which to establish a claim for higher remuneration. We may ask for 8*s*. 6*d*., but until we can give solid reasons, and not vague generalisations why we should have it, we are merely ploughing the sands.

Dr. Brend's comments on the unsatisfactory way in which medical affairs generally are dealt with by the State will receive wide endorsement.

I am, Sir, yours faithfully,

Enfield, March 12th, 1912. R. HALDANE COOK.

[1] THE LANCET, vol. i., 1912, pp. 383, 447, 524, 598.

To the Editor of THE LANCET.

SIR,—Whether the decision of the British Medical Association to nominate members for the Advisory Committee of the National Health Insurance Joint Committee before the "six cardinal points" have been embodied in an amending Act or conceded by the Government is to be regarded as a climb-down, or otherwise, there can be no question as to its being decidedly diplomatic. I regret, however, that the Association has decided to entertain the question of adopting the capitation system of payment. My limited experience of contract work at *per capita* is that it is decidedly objectionable from every point of view, and that we should, if possible, wash our hands of it altogether.

It is admitted by the Commissioners themselves that the Act is sufficiently elastic to permit of payment by fees for actual services rendered. This is an ideal system, it is perfectly feasible, and may now be permanently and universally established if we unite as one man in demanding its adoption. The referendum taken by the Imperial Medical Reform Union in July last justifies me in saying that fully 95 per cent. of the general practitioners in England and Wales prefer payment for actual services rendered to the old and discredited capitation system.

We have now a grand opportunity for doing away with capitation payment for club work. I sincerely hope it will not be thrown away.

I am, Sir, yours faithfully,

GEORGE BROWN,
General Secretary, Imperial Medical Reform Union.

Callington, Cornwall, March 12th, 1912.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

A Curious Compensation Case.

A REMARKABLE case of importance to public bodies was heard recently at the Manchester assizes. The plaintiff had in his house a penny-in-the-slot gas meter. A penny became fixed in the slot and the meter became inoperative, and an officer of the Manchester corporation was asked to remedy the defect. In endeavouring to extract the coin he used his pocket-knife, and inadvertently left this knife on the ledge of the cupboard in which the gas meter was fixed. A boy, aged 5, was playing about the house, and about half an hour after the official had left the child was heard screaming in the street. It was then found that the child had the knife, and while swinging round a lamp-post had struck himself with it in the eye, whereby the sight of the eye was utterly destroyed and the eyeball had to be removed. The action was brought to recover from the corporation on the ground

that the injury to the boy was occasioned by the negligence of the official when he was acting as a servant of the corporation. After hearing evidence and arguments *pro* and *con.* the jury, in answer to questions from the judge, found that the officer, in the course of his employment and purposing to act on behalf of the corporation, was negligent in leaving the knife where he did, and that the accident was caused by such negligence. They assessed the damages at £125.

Hospital Saturday Fund.

The total amount raised for the Manchester and Salford Hospital Saturday Fund in 1911 was £7524, an increase of £358. £4400 were distributed among the hospital charities. It had been expected to realise more in a year of such good trade, but labour disputes had a serious effect upon the collections. It was urged that an attempt should be made during the present year to induce large employers of labour to encourage weekly collections in aid of the fund among their work people.

Instruction in Care of Infants.

The Board of Education in a memorandum dated November, 1910, directed the attention of local education authorities to the importance of instructing girls in the care and management of infants. The Board said that it is beginning to be widely realised that the teaching given to girls in the elementary day schools might with advantage be made more practical and be directed more definitely towards increasing their knowledge of the ordinary routine of domestic hygiene, including infant care. This work of teaching domestic hygiene has been in full operation since 1903. Instruction has been given in 103 schools to 8554 children in Standard V. and upwards.

Adolescent Insanity: Compensation Case.

An interesting case of "adolescent insanity" was recently before the Manchester County Court. A company applied for the termination or redemption of compensation payable to a girl, aged 17, on the ground that the girl was being maintained out of the public rates in Prestwich Asylum and that the disease from which she was suffering, "adolescent insanity," was not due to the accident in respect of which the compensation had been paid. The application was opposed by the South Manchester guardians, who were responsible to the county authorities for the maintenance of the girl. After hearing evidence the judge said that in a case of this kind the onus was upon the respondents of satisfying the court that the girl's present condition was due to this particular accident. Neither the assessor nor himself was so satisfied, and the compensation would therefore be terminated, with costs against the guardians.

Magistrates and Milk Prosecutions.

From the annual report of the medical officer of health for Nelson we find that in three milk prosecutions taken during the year only one conviction was obtained. Dr. Millar considers it regrettable that magistrates generally throughout the country do not appreciate more fully the importance of this question in relation to infant life. Any semblance of a defence is accepted as a pretext for dismissing a case, often with the result that local authorities are discouraged in their efforts to check adulteration, and the public continue to suffer. In view of the important position which milk occupies as an infant food, he considers it very desirable that an absolute standard of quality should be fixed, and any failure to reach such standard should be deemed an offence.

March 19th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

Professor John Joly, D.Sc., F.R.S., professor of geology in Trinity College, Dublin, has been appointed Huxley lecturer, and Mr. John Furneaux Jordan, M.B., F.R.C.S. Eng., Ingleby lecturer for this year. Dr. H. Percy Pickerill, formerly lecturer in dental histology and pathology in the University, and now director of the Dental School of the University of Otago, New Zealand, has been awarded the Cartwright prize of the Royal College of Surgeons of England for an essay on the Prevention of Dental Caries.

General Hospital: Retirement of Sir Thomas Chavasse.

The resignation of Sir Thomas Chavasse, the senior surgeon, will be a great loss to the General Hospital. He was appointed assistant surgeon in November, 1878, and honorary surgeon in December, 1881, making altogether over 33 years' service to the hospital. The following resolution was unanimously carried at a meeting of the board of management on March 1st:—

That this board has received with great regret the resignation of Sir Thomas Frederick Chavasse, and desires to record its high appreciation of the very able and courteous manner in which he has performed his duties of honorary surgeon to the hospital for the past 30 years, of the great skill and unwearied attention he has always devoted to the patients under his care, and of the interest he has at all times showed in the welfare of the institution generally. That the resignation of Sir Thomas Chavasse be accepted with great regret, and that in consideration of the eminent services of Sir Thomas Frederick Chavasse it be recommended to the next annual meeting of governors that he be appointed consulting surgeon to this hospital.

The Queen's Hospital.

The seventy-first annual report shows that the balance of expenditure over income last year was £5016 19*s.* 10*d.*, as compared with £5200 in 1910. The endowment of the hospital—about £40,000—is not large, the income from investments being only £1900. This is very little towards the annual expenditure of £16,000. The annual subscriptions for 1911 reached £3402, the largest amount since the foundation of the hospital. The legacies received amounted to £3342. Under the will of Mr. John Roderick the hospital will shortly receive £10,000, and in addition one-quarter of the residue of his estate. The committee, although unable to state with any certainty the effect of the National Insurance Act upon the finances of the hospital, calls the attention of subscribers to the fact that, whatever ultimately happens, the annual expenditure will not be decreased but will in all probability be increased by the new Act. It will not reduce the number of in-patients, because it makes no provision for the treatment of serious illness, nor will it probably reduce the number of out-patients appreciably, for the majority of these are married women, children, and other uninsured persons. The annual cost of insuring the hospital staff under the Act will be about £130. The number of in-patients treated last year was 3172, a decrease of 101 as compared with 1910, but an increase of 42 as compared with 1909. The decrease was due to the fact that several wards were closed for cleaning for a longer period than usual. The average stay of patients in hospital was 19·2, as compared with 18·8 days in 1910, and the average number resident daily in the hospital was throughout the year 159, as compared with 161 in 1910. The cost of each in-patient per week was £1 9*s.* 5½*d.*, as compared with £1 8*s.* 6½*d.* in 1910. The cost per bed per annum was £76 11*s.* 9*d.*, as compared with £74 4*s.* 6*d.* in 1910. The number of out-patients was 39,743, as compared with 39,365 in 1910. Regarding the appointment of an almoner it is reported that 260 cases passed through her hands. The treatment recommended for the cases referred to has been provided by the Charity Organisation Society and to a smaller extent by the City Aid Society and other institutions. There is no reason to suppose that any considerable financial saving has been made to the hospital, and the question whether the work of the almoner should be continued and the cost of it added to the standing charges of the hospital has been deferred until a further report of the work done has been received.

March 19th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Scotland and the National Insurance Act.

THE lull in medical interest in the National Insurance Act continues, but it is satisfactory to learn that in more than one place the doctors have set themselves to consider seriously the question of club practice and the position of the present holders of such posts in view of the possibilities of the future. It is understood that more than one unofficially constituted committee is investigating this thorny and difficult problem. The results will probably only be known when the Scottish Medical Insurance Council meets, and it cannot meet until railway travelling presents greater facilities than it does at present. Mr. Leishman,

chairman of the Scottish Commission, accompanied by Miss Paterson, the lady member of the Commission, visited Aberdeen on March 14th, and in the afternoon addressed a large public meeting in the town-hall presided over by the Lord Provost. Mr. Leishman had hopes that arrangements would be made with the doctors, as it was a mistake to think that all the doctors were against the Act; in some places they had sufficient to carry on the Act with. If the worst came to the worst, which he hoped would not occur, the medical benefit would be suspended and the money returned to the members. Steps are evidently being taken all over Scotland for the inclusion of insured persons in existing clubs or societies, or for the establishing of new societies in order to make the full benefits of the Act available to such persons. It seems to your correspondent that this movement, to which there is frequent reference in the daily press, has to be realised by the profession more fully than it would seem to be. Whatever the doctors may do, they cannot prevent this gathering into societies of those millions of persons who are dealt with in the Act, and those societies will have to be dealt with later, unless Providence interposes, and the Act is suspended by a new Parliamant appearing on the scene. The profession, however, can hardly reckon on such intervention.

The Marine Biological Association of the West of Scotland.

The management and policy of this association have come in for severe criticism at the twelfth annual general meeting of the association held last week. Approval of the report was eventually carried by 12 votes to 10, but much doubt as to the policy of the executive has certainly been created.

Strichen Hospital Affairs: Official Inquiry.

At a meeting of the Deer District Committee, held on March 2nd, there was a private sitting over the vexed question of the administration of the Strichen Infectious Diseases Hospital, which has been under consideration since June, 1910.[1] The results of the inquiry, as embodied in a report, ordered by the Local Government Board into the management and administration of the hospital, had been submitted at a previous meeting of the district committee, when the appointment of all the subcommittees was postponed, and also consideration of the report until March 2nd. The report was considered *in camerâ*. The terms of the report were briefly as follows:—The Commissioners appointed by the Local Government Board to make inquiries were Mr. Alexander McKinna and Dr. Thomas F. Dewar. The inquiry was held in the Victoria Hall, Maud, on Tuesday and Wednesday, August 29th and 30th, 1911. The points of inquiry related to the following matters. 1. The case of Dorothy Henderson, Longside Manse, who was said to be removed home from the hospital while still in an infectious state, thereby conducing to other four cases of scarlet fever. 2. The case of Eliza Leal, whose case was diagnosed as scarlet fever on her entering the hospital, and who developed symptoms of scarlet fever 19 days after admission to hospital. 3. Alleged alterations in hospital books. 4. Alleged substitution of hospital books. 5. General administration of the hospital. 6. Visitation of the hospital by members of the subcommittee. 7. Relation of the convener of the hospital committee to the staff. 8. Hospital regulations. With regard to the points upon which Dr. G. S. Trail is directly or indirectly implicated, the Commissioners completely vindicate and exonerate him from any blame in the matters. They find: "The management of the hospital seemed to be everything that was desired." "The buildings were clean and in good order and the patients seemed to be well nursed and attended to." The Commissioners earnestly recommend that in future all the members of the hospital committee should take part in the visitation of the hospital and thus acquire direct and personal knowledge of the details of its administration. They go on to say that, much to their regret, they feel bound to give it as their conviction that the unhappy and unseemly circumstances which have been so continuous a feature of the administration of the hospital from June, 1909, until now, are essentially associated with the personal attributes of the convener of the hospital subcommittee. While fully appreciating the fact of his devoting his time and energy to its affairs, and conducing in no small part to the general success of the hospital's working, and while believing that throughout his actions he has been actuated by what he doubtless considered his duty in regard to its supervision, they no less definitely are of opinion that the difficulties involving Dr. Trail and the matron, and in less degree the district clerk, in much distress of mind and prolonged unhappiness, have arisen from his action. With regard to the gravest of them, where Dr. Trail and Miss Clark are charged with substitution of hospital books, or complicity in such substitution, Mr. Watt is neither associated with, nor is his action endorsed by, any of his fellow members of the subcommittee. With regard to hospital regulations the Commissioners, while not feeling called upon to suggest any amendment of these regulations, desire to express their opinion that they should not be interpreted in so stringent a fashion as the minutes of the hospital subcommittee of June 17th, 1909, and March 26th, 1910, would suggest. Mr. John Watt, retiring convener, protested against the finding of the reporters of the Local Government Board, stating that he did not admit the accuracy of certain statements on which the conclusions of the report were based.

The Practitioners at Dunfermline and the Friendly Societies.

The contract between the Dunfermline medical practitioners and the Friendly Societies closes at the end of the current month. This position of affairs ensues upon the local medical men raising their terms from 4*s.* 4*d.* to 8*s.* 8*d.* annually per member and intimating their resignation unless their terms were accepted. Representatives of the Friendly Societies, meeting as a committee, accepted the resignations, and it was decided by the Oddfellows to accept the services of two Glasgow medical men. The other Friendly Societies in Dunfermline have not yet decided upon a course of action.

March 19th.

[1] See THE LANCET, June 18th, 1910, p. 1722, and Sept. 9th, 1911, p. 798.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Act.

AT the mass meeting of the medical profession held in Dublin last June the care of the negotiations with the Government and others as to the terms of the Insurance Bill was committed to a joint committee of the British and Irish Medical Associations. This joint committee has now issued a report to the practitioners of Ireland detailing its labours, discussing the Act, and suggesting future action. The main activity of the committee seems to have been directed to a policy for which it had no mandate from the profession—the restoration of medical benefits to the Bill as applied to Ireland. In this attempt it failed. The report now issued deals fully with the provisions of the Act as applied to Ireland, and will prove of great value as regards future action. Although the Act as it applies to Ireland does not include medical benefits, there are, it appears, two ways open by which medical attendance may be secured—(1) as additional benefit under the terms of the Act and the regulations of the Commissioners; (2) by societies independently of the Act. Attempts were made to secure that medical benefits, if granted as "additional benefits" in Ireland, should be administered by the Insurance Committees, not by the societies, but Parliament added the words "unless the Irish Commissioners direct otherwise." The committee suggests that, in the event of the Commissioners so directing, it may be wise for Irish practitioners to decline all service under the Act. With regard to remuneration for medical services, the committee states that all arrangements lie between the Insurance Committees and local Medical Committees. It is properly affirmed that it is impossible now to give any considered opinion as to what the amount of remuneration should be. Rates must vary in different districts, and must be higher in the case of deposit contributors than, for instance, of selected members of a good society. The points for and against payment by capitation and by work done respectively are well set out in the report. The committee considers it very unsatisfactory that there is no appeal from the decision of the Commissioners. It suggests that the profession should insist on the following as minimal conditions, without which medical men should not accept service under the Act: (1) a total income limit for those entitled to medical benefits; (2) free choice of doctor; (3) all medical certificates to be issued by medical attendant; (4) administration of medical

benefits only through the Insurance Committees; (5) provision for extra remuneration for special services. It is intended shortly to summon a representative meeting of the profession, to which local Medical Committees should send delegates. It is also intended to form a Central Medical Committee consisting of representatives of the various medical societies, the universities, and the medical corporations. The committee urges the profession to organise in county committees without delay. It also asks practitioners to sign a pledge declining to enter into any arrangement for service under the Act except through a local Medical Committee.

New Labour Wards at the Rotunda Hospital.

The new labour wards at the Rotunda Hospital are now ready, and should render more easy the management of labour by modern methods. The suite consists of five rooms and a kitchen, a dressing-room, a waiting ward, the labour ward itself, a clerical room, and an isolation labour ward. The waiting ward and the labour ward are of the same size, the former being furnished with 12 beds. The two wards are fitted with similar hot and cold sterilised water-supplies, so that in case of need the waiting ward may be used instead of the labour ward. The floor of both rooms is of white mosaic, and the walls, to a height of 8 feet, of green mosaic. The rooms are well lighted, well ventilated, and lofty.

Royal Victoria Eye and Ear Hospital, Dublin.

The annual meeting of the Royal Victoria Eye and Ear Hospital was held last week. The report showing that the accommodation of the institution no longer meets the public demands upon it, it was proposed to add to the building so as to provide for 18 additional beds.

Derry Water-supply.

It appears from the report of a meeting of Derry water and fire brigade committee of the City Corporation, held on March 12th, that, notwithstanding all the rain of the present winter, the city reservoirs are still 64,000,000 gallons short of being full, with the result that there is a shortage of 28,000,000 gallons as compared with the corresponding period of 1911. As a result, the citizens have been placed on a restricted allowance in the hope of building up a good reserve so as to avoid a repetition of the water famine of last summer. It is clear that a more extensive supply is needed, as it is necessary, so early as at present and during a season of exceptional rain, to curtail the supply of domestic water.

The Provision for "Sanatorium Benefit" in Belfast.

The question is rapidly coming to the front, How is "sanatorium benefit" under the Insurance Act to be provided for in Belfast? At the present time the Belfast guardians have a magnificent sanatorium at White Abbey, near Belfast, which with its buildings and beautiful grounds of 33 acres cost £39,138, and which contains accommodation for 265 destitute consumptive patients. In the Forster Green Hospital for Consumption there are 76 beds (39 for men, 37 for women), and in that institution 35 beds are reserved for patients sent in on the recommendation of the medical officer of health of the city and the public health committee, these being paid for out of the rates. There are also ten consumptive beds at the convalescent home in connexion with the Royal Victoria Hospital—that is, altogether there are 351 beds available for "sanatorium benefit." Now, in Belfast during 1910, there were 825 deaths from phthisis, giving a mortality of 2·1 per 1000. Further, 929 cases of tuberculosis of the lungs were notified, pursuant to the Tuberculosis Prevention (Ireland) Act, 1908, and, in addition, 244 cases were notified voluntarily, making a total of 1173 cases dealt with by the Public Health Department. It is therefore clear that 351 beds for "sanatorium benefit" would not be enough, while under the Act as it stands at present the large Abbey Sanatorium would not be available, as Poor-law authorities are entirely outside the new insurance measure. Hence the Belfast guardians have waited upon the corporation health and finance committees with a view of obtaining for the Belfast district a portion of the capital sum allocated by Parliament for the erection of sanatoriums, as well as the yearly grants available for "sanatorium benefit" under the Insurance Act. The Belfast corporation will have to acquire the Abbey Sanatorium, becoming the responsible authority for it, having regard to the Insurance Act. If this was done an arrangement could be made for the treatment of non-insured and destitute consumptives by the guardians with the corporation similar to that already existing at Purdysburn for treatment of cases of infectious disease. If this is not done how is the Abbey Sanatorium to be maintained, and how is the city corporation to fulfil its duties as the health authority towards the consumptives, and finally, what action will the local Health Committee (to be formed under the Insurance Act) take? It is satisfactory to know that the joint corporation and finance committees are very carefully considering the matter, which presents considerable difficulties.

March 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Election at the Academy of Sciences.

IN the Section of Medicine and Surgery of the Academy of Sciences a vacancy has arisen through the death of Professor Lannelongue. Many candidates of high rank presented themselves. The proper authorities presented in the first place M. Charles Richet, the well-known physiologist, professor at the Faculty of Medicine and member of the Academy of Medicine, and in the second place M. Delorme, Médecin Inspecteur-Général of the Army Medical Service; M. Le Dentu, M. Lucas-Championnière, M. Pozzi, and M. Reclus, all members of the Academy of Medicine. Two ballots were required. At the first M. Charles Richet obtained 26 votes, M. Lucas-Championnière 25, M. Pozzi 4, M. Le Dentu 3, and M. Reclus 1. At the second, out of 60 votes cast, M. Lucas-Championnière gained 32 and was declared elected. M. Charles Richet had 26 and M. Pozzi 2. The newly-elected academician is honorary surgeon to the Hôtel Dieu, a member of the Academy of Medicine, a former president of the International Society of Surgery, and is one of the most brilliant and authoritative exponents of French surgery. His first work was the study and the dissemination of antiseptic surgery—that is to say, of scientific surgery as initiated by Lord Lister. The application of scientific surgical doctrine to current surgery constituted his second work. To make this application it was necessary completely to transform the ordinary practice of surgery, and to formulate a technical method in place of the varied procedures of traditional surgery which were devoid of scientific guidance. The most important of his writings treat of trephining under the direction of cerebral localisation, the radical cure of hernia, the removal of the tarsal bones, and the treatment of fractures by mobilisation and massage. Moreover, M. Lucas-Championnière is the director of the *Journal de Médecine et de Chirurgie Pratiques*, in which he has published numerous surgical studies.

The Academy of Medicine.

The Academy of Medicine on March 12th elected M. Mesureur, Director of Public Assistance, Paris, a member in the free section in place of M. Henri Monod, deceased. M. Mesureur was elected by 54 votes, as against M. Castex, who received 25 votes.

A Protest against the Superior Commission for the Reform of Medical Studies.

A great meeting, organised jointly by the Corporate Association of Medical Students and the Syndicates of Practitioners, took place on March 9th in the hall of the learned societies. The meeting unanimously protested against the composition of the Superior Commission for the Reform of Medical Studies, on which the practitioners are in an excessive minority, and which admits no delegates from the professional associations of students of medicine. They also protested against the mode of nomination of this commission, all the members of which are arbitrarily appointed by the Minister and not elected by their professional constituencies. They further protested against the *modus operandi* of this commission, whose duties are determined by no official decree, while it has delegated all its powers to a permanent subcommittee entirely in the hands of the administration; and against the mode of discussion of the commission, which from its first session regulates examinations bearing upon a course of instruction that it has not as yet defined.

The practitioners and the students finally demand the formation of a Superior Medical Council.

The Leave of Tuberculous Officials.

An article in the Finance Law of 1911 laid down that a law to be passed before Dec. 31st, 1912, would provide long leave of absence, with treatment and carrying the right to a pension, to officials of the public administration affected with tuberculosis. With a view of giving effect as quickly as possible to this humane intention, the Minister of Finance has appointed an Inter-Ministerial Commission, on which is imposed the task of collecting the necessary information on the subject and preparing a draft to be submitted to Parliament. As the question interests all the great administrations, this commission comprises officials of all the Ministerial departments.

The Preparation and Therapeutic Utilisation of Sulphurated Oils.

On Feb. 28th M. Huerre brought this subject before the Société de Thérapeutique. Sulphurated oils are obtained from the combination of sulphur and vegetable oils by the action of heat. The sulphurated castor oil is prepared by gradually raising the temperature of a mixture of precipitated sulphur and castor oil up to 225° C. It is a viscous liquid, containing from 6·5 to 7 per cent. of sulphur, and is very soluble in a large number of solvents, ethers, essences, acetone, chloroform, &c. This solubility permits of the preparation in a very manageable form of numerous medicaments used in dermatology, such as salicylic, pyrogallic, and chrysophanic acids, and resorcin in a sulphurated organic combination, which is always better tolerated by the skin than sulphur itself. These preparations have given good results in the dermatoses in which sulphur is indicated—pityriasis of the scalp, seborrhœic eczema, acne, &c.

The French Association of Medical Inspectors of Schools.

A new association has just been formed, the object of which is to bring into relation all the school physicians in France, to defend their professional interests, and to study questions relating to their functions. It consists of members (medical inspectors of French schools) and of associate members (school medical officers of the French-speaking countries and medical men generally interested in school medicine and hygiene). The annual subscription is 5 francs. The association is to meet this year at the end of May. The organisation of medical inspection in France and physical education will be on the orders of the day. The Congress will close with a fête organised by the medical inspectors of schools of the Seine.

The Collège de France.

The general assembly of professors of the Collège de France has forwarded for the selection of the Minister as candidates for the chair of histology (formerly the chair of anatomy, now vacant by the resignation of M. Ranvier) the names of first, Dr. Nageotte, professor at the École Pratique des Hautes Études, and second, Dr. Jolly, adjunct director of the same school. Two ballots were requisite, for at the first each candidate obtained 15 votes; at the second M. Nageotte obtained 18 votes and M. Jolly 15.

March 18th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

A Tribute to the Memory of Lord Lister.

THE news of Lord Lister's death was received here with the utmost regret by the medical profession, and the Gesellschaft der Aerzte at once decided to hold a special meeting for the delivery of an address in which the ever-memorable results of his labours should be duly appreciated. Professor Fränkel, who was the chief speaker on this occasion, did not try to say anything new to his audience, who were all well acquainted with Lister's achievements, but he pointed out that some years before the introduction of antiseptic surgery two Austrian medical men had called attention to the importance of cleanliness and the avoidance of external contamination in the treatment of surgical diseases and wounds. One of these was Semmelweis, who in 1842 tried to eliminate the dangers of infection from obstetric practice, and the other was von Kern, who at the same time maintained that wounds became infected from the outside and might be kept healthy by covering them. Professor Fränkel observed that there was an important difference between these two and Lord Lister. Whereas his predecessors had merely a more or less intuitive notion of the right thing, Lister was not only capable of thinking out the whole problem, but he also found means of putting his ideas into practical execution. Professor Fränkel's audience included many distinguished personages, and his discourse had a very favourable reception.

Scarcity of Children's Hospitals in Vienna.

In this city there are far too few beds available for the hospital treatment of sick children, and it is a constant complaint of all medical and social workers that for this reason it is difficult to deal adequately with infectious diseases. The matter was recently brought into general notice by a letter in the public press, and the correspondence ensuing thereon disclosed the curious fact that in Vienna there are three hospitals intended for the treatment of children, but closed for lack of funds. Under the wills of three different persons, each of whom had bequeathed a certain sum for that purpose, three hospitals, one with 30 beds, one with 50 beds, and one with 100 beds (the last named is not completed yet), were built in the expectation that the funds for maintaining them would be forthcoming when required. In former years such hopes were justifiable, but nowadays it seems that charitable people are less frequent. So we have only the children's clinic with 56 beds, the Wilhelminen Spital with some 300 beds, one institute with 40 beds in the situation where the children's clinic formerly was, and two new hospitals which have been erected for diseases of children within the last five years, one with 100 beds and one with 120 beds. Moved by these unsatisfactory conditions, Mr. von Guttmeun has recently handed over a sum of three millions of kronen (£120,000) to the Jewish community of Vienna, for the purpose of erecting and maintaining a children's hospital on a large scale, for patients of all nations and creeds, and he has given permission that all other funds granted for the purpose of children's hospitals may be united with his grant, as he does not wish his name to be associated with any ward or cot or building.

The Dispute between the Rettungsgesellschaft and the "Medical Organisation."

As was explained in this column on Jan. 13th last, serious differences of opinion had then arisen between the "Medical Organisation" of Vienna and the Rettungsgesellschaft (First Aid Association), also of this city. Things went so far that a boycott of the association by the Vienna practitioners was contemplated. The main objects of conflict were questions of principle. The Rettungsgesellschaft was unwilling to regulate its scale of medical fees, and its other rules as regards medical service, according to the lines laid down by the Medical Organisation. The controversy was so serious that several lawsuits were commenced, but the two parties fortunately came to an understanding before the courts had an opportunity of intervening, and all quarrels have now been amicably arranged. This result has been received with great satisfaction by the profession in general, for the dispute between the two medical corporations was regarded by all as most inappropriate, to say the least. The Medical Organisation is now recognised by the Rettungsgesellschaft as being the duly accredited representative of the medical practitioners, and the latter's scale of fees has been satisfactorily adjusted.

A Popular Lecture on Tuberculosis with Kinematographic Illustrations.

The board of health recently made an interesting experiment by using the kinematograph to illustrate a popular lecture on the nature, spread, and prevention of tuberculosis. In the course of this lecture, which was intended for the information of the people, Dr. Winter, one of the public health officers of Lower Austria, showed moving pictures that represented first the unhealthy surroundings of the poorer classes which are so favourable to the communication of the disease, and, secondly, the hygienic conditions of a sanatorium. The pictures were at the same time explained by the lecturer. Several pathological specimens were then shown, including the early stage of lupus, its treatment, and the favourable results obtainable in early cases, as

well as examples of tuberculosis of the joints and bones. The methods of treatment in the open-air sanatoriums were demonstrated, and the public were shown how a good supply of fresh air could be insured by proper arrangement of the windows. This novel form of popular instruction in medico-hygienic matters will no doubt prove useful, for a combination of lectures and visual demonstrations has many advantages over purely theoretical teaching.

March 16th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Alessandro Codivilla.

THE Bologna school has lost one of its chief ornaments in this accomplished and versatile surgeon, to whom orthopædy is indebted for not a few of its most ingenious and effective appliances. A Bolognese by birth, he was educated at the celebrated Archiginnasio, enrolling as a student of medicine and graduating with distinction in 1886, when in his twenty-fifth year. In 1889 his skill in the operating theatre and his expository power in the lecture-room procured him rapid promotion in various surgical institutions, notably in those of Macerata and Imola, till in 1890 his fertility of resource and well-nigh uniform success in relieving the defects, infantile, congenital, or accidental, of the apparatus of locomotion, marked him out as successor to Professor Panseri as director of the famous Istituto Rizzoli in Bologna. Here he found his special *métier*, and so improved on the traditions, already honourable, of the institution as to make it a centre not only of relief or rehabilitation to its young inmates but of instruction, not to say inspiration, to those interested in orthopædy, theoretical and practical. At the periodical congresses of surgery his presence never failed to enhance the interest and value of the proceedings, and not a few of his papers, read and discussed on these occasions and since published in a permanent form, have passed into the literature of the profession. His success in treating or in rehabilitating the wounded from the seat of war in Tripoli, conveyed as many of these were to Bologna so as to be under his eye, evoked the admiration of his colleagues as well as the gratitude of the patients, and proved a manifest consolation to him during the painful illness to which he has so prematurely succumbed.

The Guido Baccelli Ambulance at Tripoli.

Of this institution, called after its initiator and organiser, known throughout Italy as "Dean of the Faculty of Medicine," there are four sections devoted to the care and cure of the natives injured or ailing at the seat of war. All the indigenous population of Tripoli are eligible for treatment; first, in the Medical Section, directed by Captain Scaloso of the Army Medical Staff; second, in the Surgical, directed by Captain Bevacqua, of the same corps; third, in the Ophthalmic, directed by Captain Mazza; and fourth, in the section set apart for oto-rhino-laryngeal maladies, directed by Captain Tonietti, also, like the three others, of the Medico-Military Department. The services offered are gratuitous, available every day of the week from 9 to 12 A.M. and from 4 to 6 P.M. In addition to this there will soon be opened a special "ambulatorio" for syphilitic diseases, to be superintended, like the four sections above referred to, primarily by General Salsa, and secondarily by the various "servizi sanitari" and the *personnel* of the "Amministrazione degli Instituti Ospedalieri." Premises for "first aid" are well advanced in construction. Further, in the same laudable direction there will shortly be made available a set of rooms for disinfection, for baths, for mortuary requirements, including necropsy, with laundries, and accommodation for the *personnel* of the administration. All these additions to the "Ospedale Civile," fully equipped and up to date in every particular, will soon be in working order, constituting a substantial boon to the native population and of happy augury for the future of the Tripolitania, when, as is anticipated, it will come finally under the legislative control of the Italian kingdom.

March 14th.

THE CREMATION SOCIETY OF ENGLAND.—The annual meeting of subscribers will be held at 20, Hanover-square, London, W., on Wednesday, March 27th, at 3 o'clock.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The New Austro-Hungarian Hospital.

THIS institution was erected at the cost of £65,000, a large proportion of which was contributed by the Austro-Hungarian Government. At present it has a State subsidy of 70,000 kronen per annum (a krone = 10*d.*). It is equipped with every modern convenience and requisite and commands one of the finest sites in the metropolis. The thing that especially strikes a visitor is the abundance of space and light in the whole hospital. There is not a single obscure corner; everywhere plenty of light floods in through the many high, broad windows. The whole establishment is constructed on hygienic and sanitary principles, and the cleanliness in a city like Constantinople is particularly worthy of mention. The view from the windows over the Bosphorus, the Asiatic shore, and the undulating cypress-clad hills all around is superb. The material for the building, as well as the internal surgical and medical equipment, were furnished by firms in Vienna. The hospital has 60 beds, but this number can be increased. Half of the hospital is occupied by the surgical department; the other half is for medical cases; and there is also a separate building for infectious cases. A suite of rooms is reserved for private baths for the outside public. Two members of the medical and surgical staff, Dr. Schuster and Dr. Ehrlich, possess diplomas from the University of Vienna. A lady doctor, Fräulein Frisch, is also on the staff. Women are, of course, not allowed to practise medicine in Turkey, but this hospital is on Austro-Hungarian territory and outside the Ottoman medical jurisdiction. Fräulein Frisch is doing excellent work under the protection of her Government. The hospital possesses two automobiles, one for ambulance purposes and one for the use of the staff.

The War Refugees from Tripoli.

It has been found that almost all the refugees from Tripoli are suffering from various chest affections. Quite a large number have developed pneumonia, and bronchitis is very common. There are also several cases of phthisis. Investigation showed that the refugees, mostly Arabs, are unable to stand the wintry weather prevailing in Constantinople at present. It has therefore been decided to send all the sufferers further south, where the climate is warmer, to such places, for instance, as Beirut. The Ottoman Government has granted a special sum of money for this purpose.

Lectures on Hygiene.

In order to spread among the population a knowledge of hygiene and sanitation the medical authorities of the hospital of Gulhaneh, in Stamboul, have decided to arrange an exhibition and to deliver a free course of lectures. In the rooms to be assigned for this exhibition there will be on view a large number of statistical tables and sketches showing the causes of disease, as well as microscopical preparations. It is intended also to give instruction in the bringing up of children and in the care to be taken during an outbreak of infectious diseases. These lectures should help to remove the gross superstition and ignorance of the lower classes of the population, provided, of course, that the design is not left to the chances of kismet.

The Recent Fires at Stamboul and Balat.

The private subscriptions for the sufferers from the recent great fires in Stamboul and Balat have produced the sum of over £75,000, a large proportion of which came from Great Britain. Exceedingly little of that sum has been distributed among the burnt-out. Continual complaints are brought forward to the effect that the destitute are starving and are exposed to the inclemency of the wintry season without receiving any help whatever. If some small assistance is given here and there, the formalities are so intricate that the poor are losing heart completely. I have made inquiries and was told that the bulk of the contributions is reserved for the construction of fire-proof dwelling-places. In the meantime the need of the burnt-out is very great indeed. Mention should be made of the prompt and generous help given to the sufferers by the British Ambassador, Sir Gerard and Lady Lowther.

Feb. 20th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

The Substitution of Saccharine for Sugar in Prepared Foods Prohibited.

THE Board of Cabinet Officers of the United States Government charged with the enforcement of the pure food laws has rendered a final decision against the use of saccharine in prepared foods, thus settling a controversy of almost four years' duration. This decision is based on the Remsen Board's report that the addition of saccharine to food, as a substitute for sugar, "must be regarded as a substitute involving a reduction in the food value of the sweetened product, and hence a reduction in its quality."

Factory Investigation.

In the New York State Senate, on Feb. 28th, a Bill to continue the Factory Investigation Commission for another year and to give it an additional appropriation of $60,000 was passed. The object of this Commission, which was created last year after a disastrous factory fire in New York in which many workpeople were killed, was to investigate the conditions prevailing in factory buildings in the city.

The Quarantine Situation in New York.

The Governor of New York State has nominated Dr. Joseph J. O'Connell, of Brooklyn, to succeed Dr. Alvah H. Doty as port health officer of New York. Though a distinguished neurologist, Dr. O'Connell is without experience, so far as is known, of sanitary or quarantine problems. Assistant Surgeon-General L. E. Cofer, of the Public Health and Marine Hospital Service, after explaining recently at the New York Academy of Medicine that 44 ports of the United States were under exclusive Federal control, pointed out that, on emergency—e.g., the prevalence of cholera last summer—the Federal Government invariably sent to New York and the other ports under State control a surgeon of the Public Health and Marine Hospital Service to supervise matters. Mr. William Williams, Commissioner of Immigration, also a Federal official, at the same meeting of the Academy, pointed out that all immigrants, after the State inspection, have to undergo detention until any latent disease has had time to develop, and the immigrant is not permitted to go ashore until it is certain that no such disease exists. While the health office of the port of New York, therefore, remains a sought-out pecuniary prize, the salary being £3200 per annum, the importance of the appointee to the welfare of the community is less than has hitherto been thought. The other ports of the United States under local control are Baltimore, Providence, Philadelphia, and Boston, in all of which the Federal Government intervenes in time of need; and all will in time become subject to central control alone. Dr. Doty's services are not to be lost to New York, for, as health officer of the port, he was, *ex officio*, a member of the Department of Health, and he has now been elected a member of the advisory board of the Department.

Vindictive Baby Poisoning.

A young woman-of-all-work in the Infants' Hospital of the Brooklyn Nursery was arrested on Feb. 24th on the charge of having poisoned eight babies in the institution by putting oxalic acid in their milk bottles. The young woman, who has a baby of her own, confessed the crime, stating, however, that she had no intention of killing the infants, but merely wished to create a disturbance and trouble for the nurses in return for slights she had received. Twenty-two other infants in the hospital escaped by the accident of a door slamming while the woman was putting the acid into the bottles, frightening her so that she withdrew from the refrigerator in which the bottles and sterilised milk were kept. The woman's antecedents are bad and she is pregnant.

A Doctor's Suit Against the Mayor of New York.

Some time ago Mayor Gaynor, of New York, was shot while he was on the deck of a steamship about to sail for Europe. As the steamer docked in the North River, on the New Jersey side, the victim was taken to a New Jersey hospital. The house surgeon of this institution rendered a bill for £1500. The New York Board of Aldermen tendered £500, which sum was refused. The surgeon now claims £2600, and when the mayor recently went to Atlantic city (a popular New Jersey seaside resort) had a summons served upon his patient. A summons of this kind cannot be served across State lines. The suit will be contested on the ground that the surgeon was only accidentally called into the case in the emergency, and was not engaged either by the mayor or any of his friends.

Portrait of Dr. Wyeth Presented to the New York Academy of Medicine.

On the evening of Feb. 15th a portrait by Mr. J. Campbell Phillips of Dr. John A. Wyeth was presented to the New York Academy of Medicine. The presentation was made on behalf of the Academy by Dr. Simon Baruch.

Outbreaks of Cerebro-spinal Meningitis.

Dr. Abraham Sophian, of the New York Department of Health, has returned from Texas, where an epidemic of spinal meningitis has been raging, 300 cases having occurred in one month in the city of Dallas alone. About 45 per cent., rather more than half the usual percentage, of the cases were in children. Dr. Sophian attributes the success in stamping out the epidemic to the promptness with which patients, rich and poor alike, were removed to hospitals, and to the use of the antimeningitis serum prepared by the Health Department in New York, with which he inoculated 3500 patients. The general mortality was about 10 per cent., but only from 5 to 6 per cent. in children, the percentage being raised by the large proportion of patients over 60 years of age and the many negroes infected.—Cerebro-spinal meningitis is also reported to be spreading in Oklahoma. The disease has appeared in 30 counties of the State and there have been 187 cases with 67 deaths.

Mortality among Alaska Indians.

Passed Assistant Surgeon Foster, of the Public Health and Marine Hospital Service, returning from a tour through Southern Alaska, has informed Congress that at least £14,000 will be required for additional medical work among the Indians of that section. The birth-rate for the past five years and seven months has been 72·3 per 1000, while the death-rate has been 85·4. During the last ten years there has been a decrease in the Indian population of about 14 per cent. The large mortality is due mainly to tuberculosis, which always attacks tribes recently rescued from savagery and put into civilised clothing and dwellings. If the present proportion of deaths to births is not modified, the tribes will be extinct in about 60 years.

Vaccination and Small-pox in the Philippines.

Recently-published statistics show that small-pox has been practically eradicated from the United States Army in the Philippines. In 1898, 10,000 American soldiers in the islands had 76 cases of small-pox, a case-rate of 7·67 per 1000; deaths numbered 21, a mortality-rate of 2·12 per 1000. In 1910, among 12,277 soldiers, only 2 cases of small-pox occurred, and both recovered. In the earlier years of American occupation many of the soldiers were volunteers, among whom it was difficult to enforce vaccination. Moreover, the vaccine brought from San Francisco and Japan became inactive in the warm climate. On the introduction of fresh lymph from Carabao calves in 1900 the great prevalence of small-pox among the troops quickly subsided.

March 9th.

DONATIONS AND BEQUESTS.—Among the large bequests under the will of the late Lord Wandsworth are the following:—£10,000 to be used for medical research "as my friend and doctor Sir William Bennett shall decide is best," £5000 to the Bolingbroke Hospital, Wandsworth Common, S.W., £1000 to the London Hospital, £1000 to St. George's Hospital, and £500 to the Brompton Hospital for Cancer.—The late Mr. James Cook has left a sum amounting to nearly £50,000 to be equally divided between the Taunton and Somerset Hospital, the Bridgwater Infirmary, and the Royal West of England Sanatorium.—The late Mrs. Margaret B. Swaine has left her residence, The Highlands, Bexhill on-Sea, to St. George's Hospital for a convalescent home. The residue of the testatrix's estate will be used for the endowment of such home if the hospital authorities accept the bequest.

Obituary.

SIR RICHARD BRAYN, M.R.C.S. ENG., L.R.C.P. LOND., L.S.A.,

LATE MEDICAL SUPERINTENDENT OF BROADMOOR CRIMINAL LUNATIC ASYLUM, AND HOME OFFICE EXPERT IN LUNACY.

Sir Richard Brayn, late medical superintendent of Broadmoor Criminal Lunatic Asylum and Home Office expert in Lunacy, whose death, after a short illness, in his sixty-second year, we announced last week, was the son of Mr. T. G. Brayn, of Market Drayton, Salop. He received his medical education at King's College Hospital, where he was successively first year, second year, and senior scholar, besides winning prizes in many special subjects. In 1875 Mr. Brayn was appointed assistant surgeon to H.M. Convict Prison, Portsmouth, thus commencing what was to be a distinguished career in the prison medical service, and more particularly in connexion with criminal lunacy. He later became assistant surgeon at H.M. Prison, Millbank, and in 1879 was promoted to medical officer of H.M. Prison, Pentonville; in 1882 he was moved to the invalid establishment at Woking, where he also had charge of the insane convicts.

In 1889 Mr. Brayn was appointed Governor and medical officer of the Female Convict Prison at Woking, which he retained until 1896, when he succeeded Dr. David Nicolson as medical superintendent of Broadmoor Criminal Lunatic Asylum on the latter being appointed Lord Chancellor's Visitor in Lunacy. He held this onerous and responsible post for over 14 years, becoming an acknowledged authority on criminal lunacy and one whose opinion was held in high esteem in all such matters. He was an excellent administrator and was indefatigable in his work, always having the interest of the asylum, both patients and attendants, at heart. He retired in 1910, the constant anxiety and responsibility having commenced to tell upon his health, but he was appointed, on his retirement, a member of the Council of Supervision, thus maintaining his interest in the asylum. He also continued to act as mental expert to the Home Office, which position he held up to the time of his death. He received the honour of knighthood in 1911.

He married Miss Laura Negus, daughter of Deputy Inspector-General Fysher Negus, R.N., who, with a son and a daughter, survive him, by whom, as also by his many friends, he will be greatly missed. The funeral took place at Southsea on March 15th, the first part of the service being held at St. Peter's, Somers-road. Amongst those of his old friends were Dr. Nicolson, Dr. Herbert Smalley, Medical Inspector of H.M. Prisons, who also represented the Prison Commissioners, and Dr. John Baker, the medical superintendent of Broadmoor Asylum.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Albert Schütze, of the German Red Cross Society, who had been serving in the Turkish Red Crescent Ambulance Hospital at Gharian, where he was in charge of the medical side, from typhus abdominalis, aged 39. He had distinguished himself as a bacteriologist in the Berlin Institute of Infectious Diseases, and had acquired the rank of professor of the university. During the Russo-Japanese war he served with the German Red Cross expedition, and was afterwards appointed by the Berlin city authorities head of the newly established Bacteriological Institute in connexion with the Moabit Hospital.—Dr. Windels, medical member of the Prussian judicature, aged 64. He was held in high esteem by the medical profession from his sympathetic action in its behalf.—Two German medical men have very recently died as the result of dissection wounds: Dr. Stark, of Lörrach, and Dr. Hermann Hahn, prosector of the Anatomical Institute of the University of Munich.—Dr. Andreas Mordtmann, one of the most popular medical men in Constantinople, where he had been for something like half a century. His father, who came from Hamburg, was for many years in business in Constantinople, so that when Dr. Mordtmann returned from Germany, where he had studied medicine in Berlin and Würzburg and had also acted as assistant in the Halle University Medical Clinic, he had an excellent introduction to various classes, both of Turks and foreigners, in the Turkish capital. Both he and his father were eminent linguists and orientalists.—Dr. Oskar Schreyer, railway surgeon to the Shantung line in China. He was murdered by revolutionary soldiers while endeavouring to assist the family of one of the European engineers.—Dr. C. J. van der Burcht van Lichtenberg, formerly inspecting medical officer of the Dutch army.—Dr. Triaire, of Tours, corresponding member of the Paris Academy of Medicine.—Dr. A. Stopezanski, formerly professor of chemistry in the University of Cracow.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At a meeting of the Council of the Royal College of Surgeons of England, held on March 14th, the under-mentioned diplomas were conferred upon the following gentlemen who have now complied with the by-laws of the College:—

Diploma of Fellow.—Robert Coltart Harkness, M.B., Ch.B. Edinburgh, L.R.C.P., M.R.C.S., Edinburgh and Manchester Universities and St. Bartholomew's Hospital.

Diploma of Member.—John Walter Barron Hanington, M.D. McGill, McGill University and London Hospital.

Licence in Dental Surgery.—Walter Stanley Hoare, Middlesex and National Dental Hospitals; George Matthews, Guy's Hospital; William Macqueen Potter, Charing Cross and Royal Dental Hospitals; and Sidney Thomas Taylor, Middlesex and National Dental Hospitals.

UNIVERSITY OF BRISTOL.—At the second examination for the degrees of M.B., Ch.B., held in March, the following candidates passed:—

Alan Gabriel Bodman, John Wesley Gilbert, William Kenneth Armstrong Richards, Douglas George Clutsam Tasker, and Edward Scott White.

N.B.—This list is issued subject to its approval by Council.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bonn:* Dr. Mathias Makkas has been recognised as *privat-docent* of Surgery.—*Catania:* Dr. Francesco Caruso has been promoted to the chair of Obstetrics.—*Genoa:* Dr. Luigi Massini has been recognised as *privat-docent* of Internal Pathology.—*Giessen:* Dr. Erich Opitz, of Düsseldorf, has been offered the Professorship of Midwifery and Gynæcology, in succession to Dr. von Franqué, who goes to Bonn.—*Kazan:* Dr. V. Boldyreff, of St. Petersburg, has been appointed to the chair of Pharmacology.—*Leipsic:* A new clinic for diseases of the ear, nose, and throat has been opened. Dr. Paul Frangenheim, formerly of Königsberg, has been recognised as *privat-docent* of Surgery.—*Lima:* The Medical School has recently been celebrating its centenary, as the first buildings were finished and opened during the latter part of 1811. Previously, however, there had been a professor of anatomy, Dr. Don Hypolito Unanue, and it was largely through his exertions that the school was founded.—*Lyons:* Dr. Lesieur, *agrégé*, has been appointed Professor of General Pathology and Therapeutics in succession to Dr. Courmont.—*Padua:* Dr. Carlo Mariani has been recognised as *privat-docent* of Operative Medicine.—*Prague (Bohemian University):* Dr. Josef Novotny has been recognised as *privat-docent* of Hygiene.—*Toulouse:* Dr. Soulié, *agrégé*, has been promoted to the chair of Anatomy in succession to the late Dr. Charpy.—*Tübingen:* Dr. Hans Kolaczek has been recognised as *privat-docent* of Surgery. Dr. Schlayer, *privat-docent* of Medicine, has been promoted to be Extraordinary Professor.—*Würzburg:* Dr. J. Sobotta has been appointed Extraordinary Professor of Topographical Anatomy.

PRINCESS ALICE MEMORIAL HOSPITAL, EASTBOURNE.—The Duke of Devonshire on Saturday evening, March 16th, presided at a complimentary dinner at Eastbourne given to the medical staff of the Princess Alice Memorial Hospital, all the original members of which are now on the retired list, "to show the governors' and their friends' appreciation of the noble and self-sacrificing work which these gentlemen have done for so many years, not only for the healing or relief of the sick poor in the hospital, but also, as an indirect result, for raising of the standard of health, and of medical and surgical efficiency, throughout the whole community." The toast of "The Original Members of the Medical Staff of the Princess Alice Memorial Hospital" was expressively submitted by the chairman and replied to by Dr. H. Colgate and Mr. H. D. Farnell.

THE University of London has received during the week an anonymous contribution of £100,000 towards the acquisition of a site on the Bedford Estate, and an offer of £60,000 to erect upon an approved site a Senate House and administrative offices.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE (LONDON, 1913).—By a mistake the name of Professor Henri Hervieux, M.D., Laval University, Montreal, was omitted from our published list last week of the Canadian nominations to the council of the Section of Therapeutics of this Congress.

LITERARY INTELLIGENCE.—Mr. Heinemann draws attention to the fact that "Microbes and Toxins," by Dr. Etienne Burnet, of the Pasteur Institute, Paris, originally announced at the price of 6s. net, will be published at 5s. net. Professor Metchnikoff contributes an introduction to the book, which was published last week.

HUNTERIAN SOCIETY.—On Wednesday, March 27th, at 9 P.M., at the London Institution, Finsbury Circus, E.C., the annual discussion will be held, the subject being the Therapeutic Value of Alcohol. The debate will be introduced by Sir Victor Horsley, who will be followed by, among others, Dr. Fred. J. Smith, Professor A. R. Cushny, Mr. M. Cursham Corner, and Dr. J. Langton Hewer. Lantern-slide illustrations will be furnished, and all members of the medical profession are invited.

CHELSEA HOSPITAL FOR WOMEN.—At the forty-first annual general meeting of the governors of this charity, to be held at the hospital on Tuesday, March 26th, at 4 P.M., to receive the annual report, and to transact the ordinary business of an annual meeting, the important matter of the rebuilding of the hospital has been placed upon the agenda. The urgent reasons which have led the council to recommend this step and the King Edward's Hospital Fund to approve it will be submitted, and Lord Castlereagh, M.P., the president of the hospital, will supplement the statement.

NATIONAL INSURANCE ACT.—We understand that the following nominations have been made by the British Medical Association for election to the Advisory Committee under the Insurance Act: Dr. R. M. Beaton (London), Mr. E. B. Turner (London), Dr. T. M. Carter (Bristol), Dr. S. Hodgson (Salford), Dr. J. A. Macdonald (Taunton), Mr. J. Neal (Birmingham), Mr. D. F. Todd (Sunderland), Mr. T. Jenner Verrall (Bath), Dr. A. H. Williams (Harrow), Dr. John Adams (Glasgow), Dr. J. Munro Moir (Inverness), and Dr. E. O. Price.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Nurses' Registration Bill.

MR. MUNRO FERGUSON has reintroduced his Nurses' Registration Bill in the House of Commons, where it has been read a first time. The object of the Bill is to regulate the qualifications of trained nurses and to provide for their registration. It is backed by Dr. ADDISON, Mr. PERCY ALDEN, Mr. BRYCE, Mr. DUNCAN MILLAR, Mr. SCOTT-DICKSON, Mr. REMNANT, Sir GEORGE YOUNGER, Viscount WOLMER, Mr. RAMSAY MACDONALD, Mr. FIELD, and Mr. KERR-SMILEY.

The Bill follows the same lines as the measure of last year. It proposes to institute a General Council for the Registration of Nurses in the United Kingdom consisting of 21 persons. Eight of these at least must be registered medical practitioners. One each is to be appointed by the Local Government Boards for England, Scotland, and Ireland. Three are to be chosen by the British Medical Association and one by the Medico-Psychological Association. The medical superintendents of the fever hospitals which may be recognised as training schools for nurses in fever nursing under the measure are given the right to erect a medical man as their representative. Three members are to be nominated by the Privy Council. Eight representatives are accorded to registered women nurses. Registered male nurses may elect either a medical man or one of themselves, and registered mental nurses are also given a representative. A provisional council is set up by the Bill for the purpose of bringing the measure into operation.

After providing for the setting up of a Register of nurses, the Bill proceeds to define the duties and powers of the Council. Clause 10, which deals at length with this matter, is in the following terms:—

"Subject to the provisions of this Act the duties and powers of the Council shall be as follows: (1) To frame rules—(*a*) regulating their own proceedings; (*b*) regulating the issue of certificates of registration and the conditions of admission to the register of nurses; (*c*) regulating and supervising the course of training and the conduct of examinations and the remuneration of the examiners; (*d*) regulating the admission to the register of persons already in practice as trained nurses *at the commencement of this Act*; (*e*) regulating and supervising and restricting within due limits the practice of registered nurses; (*f*) defining the particulars required to be given in any notice under this Act: (2) to appoint examiners and inspectors: (3) to decide upon the places where and the times when the examinations shall be held: (4) to issue and cancel certificates of registration: (5) to publish annually a register of nurses containing the names, addresses, and qualifications of nurses who have been duly registered under this Act: (6) to decide upon the suspension or removal from the register of the name of any nurse for any breach of the rules and regulations from time to time laid down under this Act by the Council, or for conduct disgraceful in a professional respect, and also to decide upon the restoration to the register of the name of any nurse so suspended or removed: (7) to take proceedings against persons guilty of offences under this Act; and generally to do anything necessary for the due and proper carrying out the provisions of this Act. No rules made under this section shall have effect until the same shall have been approved by the Privy Council, and the Privy Council may approve the rules either without or subject to such modifications as the Privy Council think proper."

Existing nurses may obtain admission to the Nurses Register on the production of satisfactory evidence of training, coupled with three years' experience of nursing. After three years only persons who comply with the requirements of Clause 12 are to be registered. That clause is as follows:—

"At the expiration of the said term of three years any person who claims to be registered under this Act shall be entitled to be so registered, provided that such person has had not less than three years' training under a definite curriculum prescribed by the Council in the wards of a hospital or of hospitals approved of by the Council, or in an institution or institutions which the Local Government Board recommend and certify to be wholly or partly maintained out of rates, or has been trained as a nurse under regulations authorised by the Lords Commissioners of the Admiralty for the sick berth staff of the Royal Navy, or as a nurse under regulations authorised by the Army Council for soldiers of the Royal Army Medical Corps for such term as may be fixed by the Council, and that such person has passed such examination as the Council may prescribe."

The Nurses Register, according to Clause 15, will comprise (1) a general register of women nurses; (2) a supplementary register of male nurses; and (3) a supplementary register of asylum-trained nurses.

The name and description of "Registered Nurse" is specifically appropriated by the Bill to persons actually on the Nursing Register. Persons wrongfully holding themselves out as registered nurses are made liable to a fine not exceeding £10.

A clause has been inserted in the Bill laying down in precise terms that nothing contained in it shall be considered as conferring any authority to practise medicine or to undertake the treatment or cure of disease.

Feeble-minded Persons (Control) Bill.

MR. STEWART'S Bill to provide for the better care and protection of feeble-minded persons has been printed. It is an indication that the mind of Members of Parliament of all parties is being directed to this important subject.

The scheme of Mr. STEWART'S proposals is to vest in the Commissioners in Lunacy the power to license any "home, residential school, institution, colony, or house" for the purpose of the detention of persons certified as feeble-minded under the provisions of the Bill. Clause 8, which in some respects is the most important in the Bill, deals at length with the procedure for the removal of the feeble minded to these licensed institutions. Its terms are as follows:—

"Any stipendiary magistrate or justice of the peace may, upon application being made to him, order the removal of the feeble-minded person in respect of whom such application is made to any home, residential school, institution, colony, or house licensed or registered under this Act and named by the person making the application, provided always that the stipendiary magistrate or justice of the peace is himself satisfied that such feeble-minded person has attained the age of 16 years and is in need of further protection, care, and control, and is a source of injury and mischief to himself or others, and provided that the feeble-minded person in respect of whom application is made has been independently examined by two registered medical practitioners, who shall furnish certificates in writing in the form set out in the First Schedule of this Act to the stipendiary magistrate or justice of the peace to whom application is made." For the purposes of this section application may be made by the following persons, who shall give their information upon oath:—(1) The parent, guardian, or any relative, who has attained the age of 1 years, of the alleged feeble-minded person; (2) the relieving officer or overseer of the parish to which the alleged feeble-minded person shall have become chargeable; (3) any responsible person above the age of 21 years: Provided always that any stipendiary magistrate or justice of the peace, in respect of any case coming before him in his judicial capacity, although no application has been made under

this Act, or otherwise, may call to his aid two registered medical practitioners, and issue an order in accordance with the provisions of this Act for the detention of the feeble-minded person who has been brought before him, provided that the medical practitioners shall have furnished certificates in writing as set out in the First Schedule of this Act, and the stipendiary magistrate or justice of the peace may remand such feeble-minded person certified under this Act to any workhouse or home pending his or her removal to a home, residential school, institution, colony, or house licensed or registered under this Act. Any application made under this section shall be considered in private, and no one, except the applicant, the alleged feeble-minded person and his representative, and the persons signing the medical certificates accompanying the application shall, without the leave of the judicial authority, be present at the consideration thereof. The relieving officer of any parish shall apply to the stipendiary magistrate or justice of the peace for an order to be granted in respect of any person found wandering in that parish, and without care and control, if he is satisfied that such person is a fit and proper person for detention under this Act."

By Clause 9 no feeble-minded person above the age of 16 who has been so certified by two medical practitioners shall be received or detained in a licensed institution unless upon a magistrate's order. No feeble-minded person who has attained the age of 21 years shall be detained for a period exceeding 18 months from the date upon which he has attained such age unless on the written authorisation of the Commissioners in Lunacy. These Commissioners have also wide powers of inspection, visitation, and control. The rights of parents, guardians, and relatives to take charge of feeble-minded persons are maintained.

The form of the medical certificate referred to in Clause 8 is set out in the First Schedule. It reads as follows:—

"I, *A. B.*, a person registered under the Medical Act, 1858, and in the actual practice of the medical profession, do hereby certify that I have carefully examined [*name*] of [*state address*] , and am of opinion that the said [*name*] is feeble-minded, and requires detention as provided for by the Feeble-minded Control Act, 1912, for his own benefit or for the benefit of the public at large.

"I further certify that I have formed this opinion on the following grounds:—(*a*) Evidence of feeble-mindedness. (*b*) Evidence of the absence of proper care and control. (*c*) Evidence as to being a source of injury and mischief to himself or others.

"*Note.*—This may consist either of facts observed by the medical practitioner or of facts supplied by others. When the information is supplied by others it is to be so stated, together with the names and addresses of persons supplying the information.

Signed .....
Address.....

Date ....."

It should be noted that the measure is a private Member's Bill, and is one for which the Government take no responsibility.

Medical Inspection of Schools.

In the report of the Board of Education for the year 1910–11, which has just been presented to Parliament, attention is drawn to the medical inspection of schools. It is stated that the chief medical officer of the Board has dealt in a separate report with the subject as it affects elementary schools. Some comments on the matter as it relates to secondary schools are contained in the Blue-book now issued. It appears from it that systematic provision for medical inspection has been instituted in a considerable number of secondary schools. "From the reports of school medical officers, some of which are regularly printed and issued," the report proceeds, "a large body of material is being collected which will form the basis for a general review of the work, and which will be fertile both in information and in suggestion. On the whole, it appears that systems of medical inspection are based on a similar plan, but with considerable divergence in detail. The inspection is in some cases compulsory, in others optional, and it takes one or more of the following forms: (*a*) inspection on admission, (*b*) periodic inspection during school life, and (*c*) special inspection of cases calling for particular attention. Various methods are in use with regard to the keeping of records, communication with parents, and the connexion with the medical inspection of the arrangements for physical exercises, whether ordinary or remedial. It is needless to discuss the advantages of systematic medical inspection of school children. It may be specially noted that, as regards secondary schools, such inspection is largely the continuation of care for children's health after they leave the elementary schools, for the majority of them are the same children. On Jan. 31st, 1911, 88,256 boys and girls in the grant-earning secondary schools in England, or a little over 60 per cent. of the whole number of pupils in attendance, were ex-public elementary school children. Out of the 862 secondary schools in England on the grant list on Jan. 31st, 1911, there were 581 in which this proportion was over 50 per cent., and in 237 of these it was over 75 per cent. It is wasteful that the benefit of systematic medical inspection should be withdrawn from children merely because they have passed from one kind of public school into another. And the importance of this consideration is greatly enhanced by the fact that the transference takes place when the children are approaching a critical stage in their physical development—a stage in which the risk of over-pressure tends to increase, and in which continuity of treatment is more than ever necessary if the benefit of previous care is not to be largely thrown away."

HOUSE OF COMMONS.

WEDNESDAY, MARCH 13TH.

Sleeping Sickness in Nyasaland.

Dr. CHAPPLE asked the Secretary of State for the Colonies whether he could state how many deaths had taken place from sleeping sickness, how many deaths from trypanosomiasis in domestic animals, and how many trade routes been closed in Nyasaland since the Colonial Office was first advised to relax the big game laws in the interest of humanity and commerce; and whether, if he was not yet satisfied with the evidence that game was a reservoir and Glossina morsitans a carrier of the germ of the disease, he would induce the big game hunters to submit to a temporary sacrifice by yielding to a relaxation of the game laws in the interest of human life and British trade by the promise that the restrictive laws would be reimposed if game and tsetse were proved to be innocent.—Mr. L. HARCOURT replied: The total number of cases of sleeping sickness recorded in Nyasaland up to the end of 1911 was 57, of which 21 are known to have died. I am not in possession of any statistics to show how many domestic animals had died from trypanosomiasis and I am not aware that any trade routes have been closed. My honourable friend assumes that a relaxation of the big game laws is in the interest of humanity and commerce—that is to say, that the presence of the large wild animals and of these alone is prejudicial to human life and to trade, presumably by their bringing the tsetse-fly with them. But it has not been shown that if these animals were to disappear the fly would disappear also, and in any case many animals would remain on which the fly could feed. In the island of Principe, where the fly abounds, there is no big game. The Governor of Nyasaland is in communication with Sir David Bruce, who is at work in his laboratory in the sleeping sickness area in the Protectorate, and I have instructed him to furnish me with definite recommendations as to preventive measures of any kind as soon as Sir David Bruce is in a position to make them. I shall not hesitate to take any steps, however drastic, so soon as the necessity is proved.

Mr. MITCHELL-THOMSON: May I ask the right honourable gentleman whether it will be possible to lay papers on the subject on the table of the House?—Mr. L. HARCOURT: Yes, sir.

The Plague in India.

Mr. CHANCELLOR asked the Under Secretary of State for India whether he would give the latest returns concerning the plague in India, the district most affected, and whether the death-rate, compared with the corresponding period of the previous year, was declining.—Mr. H. LEWIS (on behalf of Mr. MONTAGU): The latest return of plague mortality is for the month of January, 1912. The deaths were 49,229, against 91,434 in January, 1911. The areas most affected are the United Provinces of Agra and Oudh, the Hyderabad State, and the Bombay Presidency. As far as can be judged at present the disease is less virulent than in the preceding year, but there are still two months before the period of maximum intensity will be reached.

Education (Provision of Meals) Bill.

Mr. JOWETT, in moving for leave to introduce his Education (Provision of Meals) Act Amendment Bill, stated that its object was to empower the education authority to continue the school meals throughout holidays and even on Sundays. He said that the report of Sir George Newman, chief medical officer of the Education Department, was in itself quite a sufficient reason for the passing of this Bill. Sir George Newman in his report mentioned various experiments that had been carried out by the local authorities, which showed the need for the feeding of school children being continued during the holidays. Amongst the experiments was one carried out by Dr. Ralph Crowley, of Bradford, whose experiments showed that during the time the children were on holiday, instead of receiving benefit, they became actually physically less fit because they were not having the school meals.

Leave having been granted, the Bill was brought in and read a first time.

Insanity in Ireland.

Mr. GINNELL asked the Chief Secretary to the Lord Lieutenant of Ireland whether he could state the number of the persons during the last five years in Ireland certified by medical practitioners as insane who were released as sane within 12 months; the total cost to asylums in respect of those persons; whether he was aware that a rule of the Local Government Board allowed no fee to be paid to the examiner unless he gave a certificate of insanity; and whether, in the interest of ratepayers, he would have that rule altered and a fee paid for the examination, irrespective of its result.—Mr. BIRRELL wrote in reply: It is presumed that the honourable Member's question refers to the district and auxiliary asylums. The number of persons during the five years 1906–10, the latest date for which information is available, in Ireland certified by medical practitioners as insane who were released as sane (recovered) within 12 months was 5506. The cost to asylums in respect of these persons cannot be given, as the record of their cost is not kept distinct from that of the other patients. The Local Government Board has made no rule such as that suggested in the question. The majority of admissions to Irish public asylums are effected under the tenth section of the Act 30 & 31 Vic. Cap. 118. The payment of such fee in such cases is regulated by the fourteenth section of the Act 38 & 39 Vic. Cap. 67, which leaves the matter at the discretion of the committing magistrates.

THURSDAY, MARCH 14TH.

Medical Referees in Scotland.

Mr. WATT asked the Secretary of State for the Home Department to state how many medical men had been appointed in Scotland, under the Workmen's Compensation Acts, to sit as assessors along with sheriffs and sheriffs-substitute in dealing with cases under these Acts; whether it was a condition of their appointments that they shall not act in similar cases as expert medical witnesses; and, if not, would he make it a condition in future appointments.—Mr. MCKENNA said in reply: There are 84 medical referees appointed under the Workmen's Compensation Act for Scotland, and in 1910 they sat as assessors on 192 occasions. The Act prohibits a referee from acting in any case in which

he has been employed as medical practitioner, and the Home Office regulations forbid medical referees as a general rule acting privately in any case in which the workman is receiving a weekly payment for compensation or which is otherwise likely to come before a referee in the district for which he acts. I believe that these instructions are usually observed. It has not been found practicable to impose any further restriction on the medical referees.

The Insurance Act.

Mr. ORMSBY-GORE asked the Secretary to the Treasury, whether the National Insurance Commission (Wales) had taken any steps to secure the establishment of provisional local health committees in the Welsh counties and county boroughs, in view of the number of points which must be decided by the local health committees the moment the Act came into force in four months' time.—Mr. MASTERMAN answered: The steps required to secure the establishment of local insurance committees in Wales are under the consideration of the Welsh Commissioners.

Viscount WOLMER asked the Secretary to the Treasury whether, in view of the fact that small Friendly Societies in the country were finding considerable difficulty in accommodating their constitution and management to the conditions of the National Insurance Act, the Insurance Commissioners would arrange that the Act should not come into force until the last possible date, that is, Jan. 1st, 1913.—Mr. MASTERMAN replied: The answer is in the negative. The Commissioners are offering every assistance to all societies by the supply of information through lectures, by the issue of model rules and other literature, and by correspondence and interviews in their office. There is no doubt that it is in the interest of all classes of the community, and especially members of existing Friendly Societies, that the Act should come into operation at the earliest possible moment—i.e., on July 15th, 1912.

The Marquis of TULLIBARDINE asked the Secretary to the Treasury whether any part of the contribution payable by the workman, the employer, or the State under the National Insurance Act was available for the provision of sanatorium benefit for the wives and children of insured persons; and, if not, how was such treatment to be provided.—Mr. MASTERMAN answered: Under section 17 (1) insurance committees may extend sanatorium benefit to the dependents of insured persons. In such cases the cost of their treatment may be met from the general funds available for sanatorium benefit. These include the sums specified in section 16 (2) (*a*) which are contributed jointly by employers, employees, and the State, the sums specified in section 16 (2) (*b*) which are contributed by the State, and any further sums which may be provided under section 17 in equal moieties by the State and local authorities.

MONDAY, MARCH 18TH.

Blackpool Small-pox Hospital.

Mr. SUTTON asked the President of the Local Government Board whether he had been asked to sanction the conversion of the small-pox hospital maintained by the borough of Blackpool and the districts of Fylde, Preston, and Garstang into a sanatorium for tuberculous patients on the ground that it had never once been used since its erection ten years ago; if so, whether he had given the consent requested; and whether the result of the neglect of vaccination, through the Vaccination Acts of 1898 and 1907, had been to make small-pox liability less than had ever before been known in Great Britain.—Mr. BURNS replied: With regard to the first part of the question I received an application from the joint board, who maintain the hospital referred, to for an order to empower them to treat cases of pulmonary tuberculosis at the hospital, and a local inquiry was held in regard to it. The inspector who visited the site of the hospital reports that it is not suitable for the treatment of pulmonary tuberculosis, and I have informed the joint board that I do not propose to make any order in the matter. With regard to the second part of the question I prefer to express no opinion.

Testing Milk for Tuberculosis.

Mr. MOUNT asked the President of the Local Government Board whether he was aware that samples of milk for the purpose of testing for tuberculosis had been of late taken from churns arriving in London without first mixing the milk; and whether, in view of the fact that this abstraction of the cream would prejudically affect the milk if it were afterwards tested for fat, he would give instructions that no samples should be taken in future unless the milk was properly mixed.—Mr. BURNS answered: I am advised that the method of taking the samples is such that the percentage of fat in the milk is not likely to be altered to any material extent.

Preservatives in Milk.

Mr. CHARLES BATHURST asked the President of the Local Government Board whether he proposed in the Board's regulations for the restriction of the use of preservatives in milk and cream to prohibit the use of formalin as a preservative of cream, but to permit the use for that purpose of boric acid, biborate of soda, and other like antiseptics deemed by medical experts to have an injurious effect upon the nervous system; whether, and for what reason, his expert advisers differentiated between these various adulterants; and whether sterilisation and keeping under suitable atmospheric conditions would in their opinion render unnecessary the use of all such preservatives.—Mr. BURNS said in reply: The draft regulations which I have had prepared propose to prohibit the use of formalin in cream, but not to prohibit the use of boric acid, borax, or a mixture of those preservative substances, provided that a full declaration of the presence of the preservative and the amount added is made in the manner prescribed by the regulations. The considerations which have been taken into account in framing the draft regulations in question are dealt with in Dr. Hamill's report to the Local Government Board respecting the use of preservatives in cream.

The Adulteration of Flour.

Sir JOHN LONSDALE asked the President of the Local Government Board whether his attention had been called to the fact that materials for the adulteration of flour were being advertised and used by millers throughout the country; and whether, having regard to the fact that the introduction of many of these substances into flour was prejudicial to the public health, he would give an undertaking to introduce immediately legislation for the purpose of putting a stop to this practice.—Mr. BURNS answered: Section 3 of the Sale of Food and Drugs Act, 1875, provides that no person shall mix any article of food with any ingredient or material so as to render the article injurious to health with intent that the same may be sold in that state The penalty for a first offence against this enactment is a fine not exceeding £50, and for a subsequent offence imprisonment not exceeding six months. This section seems to me to deal with practices such as are described in the honourable baronet's question.

WEDNESDAY, MARCH 20TH.

Medical Men and the Insurance Act.

Sir PHILIP MAGNUS asked the Secretary to the Treasury whether he could state the present position of the negotiations between the Insurance Commissioners and the representatives of the medical profession; whether any reply had been sent to their letter of Feb. 29th embodying the conditions under which they were prepared to coöperate in the working of the Act; and whether the Commissioners would issue such regulations as would enable them to give effect to the requirements of the medical profession as set forth in their letter.

Mr. FELL had also on the notice paper a question to the honourable gentleman asking whether any progress had been made in the negotiations with the doctors as to their working under the National Insurance Act; and if the six points which they had asked would be agreed to by the Insurance Commissioners.

Mr. MASTERMAN said in reply: I propose to answer both these questions together. The British Medical Association have availed themselves of the opportunity afforded them by the Commissioners to recommend practitioners experienced in general practice for appointment as members of the Advisory Committee, and the gentlemen so recommended will be appointed on that committee. The letter of Feb. 29th has been acknowledged. No regulations have, however, yet been considered by the Joint Committee on this matter, as they recognise that this is essentially a subject in which the advice and assistance of the Advisory Committee is desirable.

Sir PHILIP MAGNUS asked the honourable gentleman whether in the event of the Insurance Committees or the Insurance Commissioners being unable to satisfy the requirements of the medical profession, and consequently deciding to adopt the alternative proposal of the Act—viz., to suspend medical benefit and to return to the insured person the money equivalent to such benefit—the insured person would be free to use that money for any purpose he might think fit; and, if so, whether the insured person would necessarily receive under the Act any medical benefit whatever.—Mr. MASTERMAN replied: If the normal scheme of medical benefit laid down in Section 15 is not carried out, not one, but several alternatives are provided by the Act. These include power for the Commissioners themselves to authorise the Local Insur... Committees to make other arrangements for providing medic... or for themselves making such arrangements as they thin... suspending medical benefit for any period and paying to... person an equivalent sum. Even if the last course we... insured person would be free, though not compelled, ... arrangements for medical treatment.

Mr. FELL asked the honourable gentleman whethe... that were being made under the National Insura... made provisionally and were subject to determina... was come to with the doctors who were to ... MASTERMAN said in reply: The answer is in the ne... into operation of the Act is not dependent upon ... may be made with representatives of the medical p...

Mr. FELL: What is the use of bringing it into op... are supposed to carry it out refuse to do so?—M... not understand the question. If necessary, the ... without medical benefits as in Ireland.

BOOKS, ETC., RECEIVED.

AFRICAN WORLD, THE, LIMITED, 1, Gresham Buildings, Be... street, London, E.C.

How to Live in Tropical Africa. A Guide to Tropical Hygiene and Sanitation. The Malaria Problem: the Cause, Prevention, and Cure of Malarial Fever. By J. Murray, M.D. Maps and Climatological Memoranda by E. G. Ravenstein, F.R.G.S. Edited by Leo Weinthal, F.R.G.S., Chief Editor of "The African World," London. Price 3*s.* 6*d.*

ALLEN, GEORGE, AND CO., LIMITED, 44 and 45, Rathbone-place, London, W.

The Visitation of the Sick. Some Practical Reflections for the Use of the Clergy and others engaged in Parochial Visitation. Dedicated to, and with an Introduction by, the Lord Bishop of Chichester. By the Rev. Theodore Johnson, Rector of Bodiam, Sussex. Price 1*s.* 6*d.* net.

AMERICAN HOSPITAL ASSOCIATION, Office of the Secretary, 522, Church-street, Toronto, Canada.

Transactions of the American Hospital Association. Thirteenth Annual Conference, held at New York City, Sept. 19th, 20th, 21st, and 22nd, 1911. Volume XIII. Price not stated.

AMERICAN LARYNGOLOGICAL ASSOCIATION (Secretary and Treasurer, 118, West 69th Street), New York City.

Transactions of the Thirty-second Annual Meeting of the American Laryngological Association, held at Philadelphia, Pa., May 29th, 30th, and 31st, 1911. Price not stated.

ANIMAL DEFENCE AND ANTI-VIVISECTION SOCIETY, 170, Piccadilly, London, W.

The Royal Commission on Vivisection. Evidence by Miss Lind-af-Hageby. Given on May 1st and June 5th, 1907. Price not stated.

BAILLIÈRE, TINDALL, AND COX, London.

The Treatment, Prevention, and Cure of Tuberculosis and Lupus with Allyl Sulphide. By William C. Minchin, M.D. Univ. Dublin. Price 3*s.* 6*d.* net.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.

Medical Gymnastics and Massage for the Treatment of Disease Deformity, and Injury. By Frederick F. Middleweek, L.R.C.P., L.R.C.S. Ed., Director of Mechano-Therapeutics and Massage, West-End Hospital for Nervous Diseases. With an Introduction by Dr. J. Arvedson, Stockholm. Price 2*s.* 6*d.* net.

CASSELL AND COMPANY, LIMITED, London, New York, Toronto, and Melbourne.

British Red Cross Society First-Aid Manual. No. 1. By James Cantlie, M.A., M.B., F.R.C.S., V.D., Hon. Surgeon-Colonel, R.A.M.C. (T.F.). Price 1s. net.

CHAMBERS, W. AND R., LIMITED, 38, Soho-square, London, W.; 339, High-street, Edinburgh.

Organic Chemistry. Entirely New Edition (November, 1911). Part I. and Part II. in one volume. By W. H. Perkin, Ph.D., Sc.D., LL.D., F.R.S., Professor of Chemistry, Victoria University, Manchester, and F. Stanley Kipping, Ph.D., Sc.D., F.R.S., Professor of Chemistry, University College, Nottingham. Price not stated.

CORAH, JOHN AND SON, Loughborough and London.

The National Insurance Act. By J. B. Pike, M.R.C.S. Eng., L.R.C.P. Ed., Honorary Surgeon, Loughborough General Hospital. Price 3d.

DORNAN, WILLIAM J., Philadelphia.

Transactions of the American Surgical Association. Volume the Twenty-ninth. Edited by Archibald Maclaren, M.D., Recorder of the Association. Price not stated.

GOVERNMENT PRINTING OFFICE, Washington.

Treasury Department. Public Health and Marine Hospital Service of the United States. Hygienic Laboratory Bulletin, No. 79. January, 1912. Digest of Comments on the Pharmacopœia of the United States of America (Eighth decennial revision), and on the National Formulary (Third Edition). For the Calendar Year ending Dec. 31st, 1909. By Murray Galt Motter and Martin I. Wilbert. Price not stated.

HEINEMANN, WILLIAM, 21, Bedford-street, London, W.C.

Microbes and Toxins. By Dr. Etienne Burnet, of the Pasteur Institute of Paris. With a Preface by Élie Metchnikoff. Translated from the French by Dr. Charles Broquet and W. M. Scott, M.D. Price 5s. net.

HODGE, WILLIAM, AND COMPANY, 12, Bank-street, Edinburgh.

Trial of William Palmer. Edited by George H. Knott, Barrister-at-Law. Price 5s. net.

[redacted]RNAL OF NERVOUS AND MENTAL DISEASE PUBLISHING COMPANY, [redacted]. 64, West 56th Street, New York.

[redacted]ous and Mental Disease Monograph Series No. 9. Studies in [redacted]hiatry. Vol. I. By Members of the New York Psychiatrical [redacted]y. Price $2.00.

[redacted]and Mental Disease Monograph Series No. 10. Handbook [redacted]al Examination Methods. By Shepherd Ivory Franz, [redacted]cientific Director and Psychologist, Government Hos[redacted]he Insane. Professor of Physiology, George Washington [redacted]. Price $2.00.

[redacted]EN, AND CO., London, New York, Bombay, and [redacted]

[redacted]e and Motivation-Tracks. A Research in Will Psycho[redacted]E. Boyd Barrett, S.J., Doctor of Philosophy, Superior [redacted], Louvain; Honours Graduate, National University, [redacted]. Price, paper, 6s. net.; cloth, 7s. 6d. net.

[redacted]ns (G. P.), New York and London.

[redacted]y with the Nerves. Letters to a Neurologist on Various [redacted]rn Nervous Ailments, Real and Fancied, with Replies [redacted]reto telling of their Nature and Treatment. By Joseph [redacted]Collins, Physician to the Neurological Institute of New York. Price 6s. net.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, London, S.W.

List of the Fellows, Members, Extra-Licentiates, and Licentiates of the Royal College of Physicians of London, and of the Holders of the Diploma in Public Health, granted jointly by the Royal Colleges of Physicians and Surgeons. MCMXII. Price not stated.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.

Diseases of the Skin and the Eruptive Fevers. By Jay Frank Schamberg, A.B., M.D., Professor of Dermatology and Infectious Eruptive Diseases in the Philadelphia Polyclinic and College for Graduates in Medicine. Second edition, thoroughly revised. Price, cloth, 13s. net.

Principles and Practice of Physical Diagnosis. By John C. Da Costa, jun., M.D., Assistant Professor of Clinical Medicine, Jefferson Medical College. Second edition, thoroughly revised. Price, cloth, 15s. net.

Clinical Diagnosis. A Manual of Laboratory Methods. By James Campbell Todd, Ph.B., M.D., Professor of Pathology, University of Colorado. Second edition, revised and enlarged. Price, cloth, 10s. 6d. net.

SMITH, ELDER, AND CO., 15, Waterloo-place, London.

Saint Bartholomew's Hospital Reports. Edited by H. Morley Fletcher, M.D., and W. McAdam Eccles, M.S., F.R.C.S. Vol. XLVII. Price 6s. or 8s. 6d. (according to date of payment).

SPOTTISWOODE AND CO., LIMITED, 5, New Street-square, London.

Minutes of the General Medical Council and of its Various Committees for the Year 1911, with Thirty-six Appendices. Vol. XLVIII. 1912. Price not stated.

General Index to the Minutes of the General Medical Council, of its Executive and Dental Committees, and of its three Branch Councils. Volumes XL. to XLVIII. (1903-1911). Price not stated.

SWEET AND MAXWELL, LIMITED, 3, Chancery-lane, London, W.C.

A Manual of Public Health Law. By Bertram Jacobs, of the Inner Temple and South Wales Circuit, Barrister-at-Law. Price 7s. 6d.

WILLIAMS, J. W., London. (Agents:—SIMPKIN, MARSHALL, AND CO., LIMITED, London.)

New Light on Consumption. By Arthur Lovell, Author of "Ars Viven di," "Concentration," "Deep Breathing," &c. Price, library edition, 3s. 6d.; popular edition, 1s.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

CAMPBELL, D. B., M.B., Ch.B. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Saltcoats District of the county of Ayr.

CORKER, J., M.B., B.S. R.U.I., has been appointed Resident Medical Officer of the Dearnley Workhouse.

DOTT, A., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Gatehouse District of the county of Kirkcudbright.

MUSGROVE, C. D., M.D. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Penarth District of the county of Glamorgan.

MUSSON, A. W., M.B., B.C. Cantab., has been appointed Surgeon under the Factory and Workshop Acts for the Clitheroe District of the county of Lancs.

ROONEY, P. J., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Virginia District of the county of Cavan.

SHIPSEY, J., M.B., B.S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Schull District of the county of Cork.

VILVANDRÉ, G. E., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Staplehurst District of the county of Kent.

VINTER, S. G., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Torpoint District of the county of Cornwall.

WATSON, J. R., M.D. Edin., has been appointed Medical Officer to the Hamilton Parish Council.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN, KINGSEAT ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, &c.

AGRA, UNITED PROVINCES, INDIA, DUFFERIN HOSPITALS AND FEMALE MEDICAL SCHOOL.—Female Senior Doctor. Salary £26 13s. 4d. per mensem, with free quarters.

ALBERT DOCK HOSPITAL, Connaught-road, E.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing. Also House Surgeon. Salary £50 per annum, with board, residence, and washing. Each for six months.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and attendance.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Second and Third House Surgeons. Salaries £80 and £75 per annum respectively, with board, rooms, and laundry.

BIRMINGHAM CITY EDUCATION COMMITTEE.—Ophthalmic Surgeon. Salary £200 per annum.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100 per annum.

BRISTOL EYE HOSPITAL.—House Surgeon. Salary £80 per annum, with board and residence.

BURNLEY UNION WORKHOUSE.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, rations, washing, and attendance.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and laundry.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Pathologist. Salary at rate of £250 per annum.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—House Surgeon for six months. Salary £70 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CLIFTON, YORK, NORTH RIDING ASYLUM.—Second Assistant Medical Officer. Salary £150 per annum, with board, apartments, washing, and attendance.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £90 per annum, with rooms, board, washing, and attendance.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £120 per annum, with board, lodging, and laundry.

DEWSBURY AND DISTRICT GENERAL INFIRMARY.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

DREADNOUGHT HOSPITAL, Greenwich.—Two House Physicians and Two House Surgeons, each for six months. Salary £50 per annum, with board, residence, and washing. Also Medical Registrar.

DUBLIN, ROYAL VICTORIA EYE AND EAR HOSPITAL, Adelaide-road.—House Surgeon. Salary £40 per annum, with board and residence.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, attendance, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—House Physician. Salary at rate of £75 per annum, with board, residence, and washing. Also Clinical Assistants.

HEMEL HEMPSTEAD, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

HUNTINGDON COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, and all found.

JERSEY POOR-HOUSE AND INFIRMARY (HÔPITAL-GÉNÉRAL).—Medical Officer. Salary £250 per annum.

KENSINGTON AND FULHAM GENERAL HOSPITAL, Earl's Court, S.W.—Surgeon.

LEICESTER INFIRMARY.—Honorary Physician.

he has been employed as medical practitioner, and the Home Office regulations forbid medical referees as a general rule acting privately in any case in which the workman is receiving a weekly payment for compensation or which is otherwise likely to come before a referee in the district for which he acts. I believe that these instructions are usually observed. It has not been found practicable to impose any further restriction on the medical referees.

The Insurance Act.

Mr. ORMSBY-GORE asked the Secretary to the Treasury, whether the National Insurance Commission (Wales) had taken any steps to secure the establishment of provisional local health committees in the Welsh counties and county boroughs, in view of the number of points which must be decided by the local health committees the moment the Act came into force in four months' time.—Mr. MASTERMAN answered: The steps required to secure the establishment of local insurance committees in Wales are under the consideration of the Welsh Commissioners.

Viscount WOLMER asked the Secretary to the Treasury whether, in view of the fact that small Friendly Societies in the country were finding considerable difficulty in accommodating their constitution and management to the conditions of the National Insurance Act, the Insurance Commissioners would arrange that the Act should not come into force until the last possible date, that is, Jan. 1st, 1913.—Mr. MASTERMAN replied: The answer is in the negative. The Commissioners are offering every assistance to all societies by the supply of information through lectures, by the issue of model rules and other literature, and by correspondence and interviews in their office. There is no doubt that it is in the interest of all classes of the community, and especially members of existing Friendly Societies, that the Act should come into operation at the earliest possible moment—i.e., on July 15th, 1912.

The Marquis of TULLIBARDINE asked the Secretary to the Treasury whether any part of the contribution payable by the workman, the employer, or the State under the National Insurance Act was available for the provision of sanatorium benefit for the wives and children of insured persons; and, if not, how was such treatment to be provided.—Mr. MASTERMAN answered: Under section 17 (1) insurance committees may extend sanatorium benefit to the dependents of insured persons. In such cases the cost of their treatment may be met from the general funds available for sanatorium benefit. These include the sums specified in section 16 (2) (a) which are contributed jointly by employers, employees, and the State, the sums specified in section 16 (2) (b) which are contributed by the State, and any further sums which may be provided under section 17 in equal moieties by the State and local authorities.

MONDAY, MARCH 18TH.

Blackpool Small-pox Hospital.

Mr. SUTTON asked the President of the Local Government Board whether he had been asked to sanction the conversion of the small-pox hospital maintained by the borough of Blackpool and the districts of Fylde, Preston, and Garstang into a sanatorium for tuberculous patients on the ground that it had never once been used since its erection ten years ago; if so, whether he had given the consent requested; and whether the result of the neglect of vaccination, through the Vaccination Acts of 1898 and 1907, had been to make small-pox liability less than had ever before been known in Great Britain.—Mr. BURNS replied: With regard to the first part of the question I received an application from the joint board, who maintain the hospital referred, to for an order to empower them to treat cases of pulmonary tuberculosis at the hospital, and a local inquiry was held in regard to it. The inspector who visited the site of the hospital reports that it is not suitable for the treatment of pulmonary tuberculosis, and I have informed the joint board that I do not propose to make any order in the matter. With regard to the second part of the question I prefer to express no opinion.

Testing Milk for Tuberculosis.

Mr. MOUNT asked the President of the Local Government Board whether he was aware that samples of milk for the purpose of testing for tuberculosis had been of late taken from churns arriving in London without first mixing the milk; and whether, in view of the fact that this abstraction of the cream would prejudically affect the milk if it were afterwards tested for fat, he would give instructions that no samples should be taken in future unless the milk was properly mixed.—Mr. BURNS answered: I am advised that the method of taking the samples is such that the percentage of fat in the milk is not likely to be altered to any material extent.

Preservatives in Milk.

Mr. CHARLES BATHURST asked the President of the Local Government Board whether he proposed in the Board's regulations for the restriction of the use of preservatives in milk and cream to prohibit the use of formalin as a preservative of cream, but to permit the use for that purpose of boric acid, biborate of soda, and other like antiseptics deemed by medical experts to have an injurious effect upon the nervous system; whether, and for what reason, his expert advisers differentiated between these various adulterants; and whether sterilisation and keeping under suitable atmospheric conditions would in their opinion render unnecessary the use of all such preservatives.—Mr. BURNS said in reply: The draft regulations which I have had prepared propose to prohibit the use of formalin in cream, but not to prohibit the use of boric acid, borax, or a mixture of those preservative substances, provided that a full declaration of the presence of the preservative and the amount added is made in the manner prescribed by the regulations. The considerations which have been taken into account in framing the draft regulations in question are dealt with in Dr. Hamill's report to the Local Government Board respecting the use of preservatives in cream.

The Adulteration of Flour.

Sir JOHN LONSDALE asked the President of the Local Government Board whether his attention had been called to the fact that materials for the adulteration of flour were being advertised and used by millers throughout the country; and whether, having regard to the fact that the introduction of many of these substances into flour was prejudicial to the public health, he would give an undertaking to introduce immediately legislation for the purpose of putting a stop to this practice.—Mr. BURNS answered: Section 3 of the Sale of Food and Drugs Act, 1875, provides that no person shall mix any article of food with any ingredient or material so as to render the article injurious to health with intent that the same may be sold in that state The penalty for a first offence against this enactment is a fine not exceeding £50, and for a subsequent offence imprisonment not exceeding six months. This section seems to me to deal with practices such as are described in the honourable baronet's question.

WEDNESDAY, MARCH 20TH.

Medical Men and the Insurance Act.

Sir PHILIP MAGNUS asked the Secretary to the Treasury whether he could state the present position of the negotiations between the Insurance Commissioners and the representatives of the medical profession; whether any reply had been sent to their letter of Feb. 29th embodying the conditions under which they were prepared to coöperate in the working of the Act; and whether the Commissioners would issue such regulations as would enable them to give effect to the requirements of the medical profession as set forth in their letter.

Mr. FELL had also on the notice paper a question to the honourable gentleman asking whether any progress had been made in the negotiations with the doctors as to their working under the National Insurance Act; and if the six points which they had asked would be agreed to by the Insurance Commissioners.

Mr. MASTERMAN said in reply: I propose to answer both these questions together. The British Medical Association have availed themselves of the opportunity afforded them by the Commissioners to recommend practitioners experienced in general practice for appointment as members of the Advisory Committee, and the gentlemen so recommended will be appointed on that committee. The letter of Feb. 29th has been acknowledged. No regulations have, however, yet been considered by the Joint Committee on this matter, as they recognise that this is essentially a subject in which the advice and assistance of the Advisory Committee is desirable.

Sir PHILIP MAGNUS asked the honourable gentleman whether in the event of the Insurance Committees or the Insurance Commissioners being unable to satisfy the requirements of the medical profession, and consequently deciding to adopt the alternative proposal of the Act—viz., to suspend medical benefit and to return to the insured person the money equivalent to such benefit—the insured person would be free to use that money for any purpose he might think fit; and, if so, whether the insured person would necessarily receive under the Act any medical benefit whatever.—Mr. MASTERMAN replied: If the normal scheme of medical benefit laid down in Seccion 15 is not carried out, not one, but several alternatives are provided by the Act. These include power for the Commissioners themselves to authorise the Local Insurance Committees to make other arrangements for providing medical benefit, or for themselves making such arrangements as they think fit, or for suspending medical benefit for any period and paying to each insured person an equivalent sum. Even if the last course were adopted the insured person would be free, though not compelled, to make his own arrangements for medical treatment.

Mr. FELL asked the honourable gentleman whether the appointments that were being made under the National Insurance Act were being made provisionally and were subject to determination if no agreement was come to with the doctors who were to work the Act.—Mr. MASTERMAN said in reply: The answer is in the negative. The coming into operation of the Act is not dependent upon any agreement that may be made with representatives of the medical profession.

Mr. FELL: What is the use of bringing it into operation if those who are supposed to carry it out refuse to do so?—Mr. MASTERMAN: I do not understand the question. If necessary, the Act will be worked without medical benefits as in Ireland.

BOOKS, ETC., RECEIVED.

AFRICAN WORLD, THE, LIMITED, 1, Gresham Buildings, Basinghall-street, London, E.C.

How to Live in Tropical Africa. A Guide to Tropical Hygiene and Sanitation. The Malaria Problem: the Cause, Prevention, and Cure of Malarial Fever. By J. Murray, M.D. Maps and Climatological Memoranda by E. G. Ravenstein, F.R.G.S. Edited by Leo Weinthal, F.R.G.S., Chief Editor of "The African World," London. Price 3*s.* 6*d.*

ALLEN, GEORGE, AND CO., LIMITED, 44 and 45, Rathbone-place, London, W.

The Visitation of the Sick. Some Practical Reflections for the Use of the Clergy and others engaged in Parochial Visitation. Dedicated to, and with an Introduction by, the Lord Bishop of Chichester. By the Rev. Theodore Johnson, Rector of Bodiam, Sussex. Price 1*s.* 6*d.* net.

AMERICAN HOSPITAL ASSOCIATION, Office of the Secretary, 522, Church-street, Toronto, Canada.

Transactions of the American Hospital Association. Thirteenth Annual Conference, held at New York City, Sept. 19th, 20th, 21st, and 22nd, 1911. Volume XIII. Price not stated.

AMERICAN LARYNGOLOGICAL ASSOCIATION (Secretary and Treasurer, 118, West 69th Street), New York City.

Transactions of the Thirty-second Annual Meeting of the American Laryngological Association, held at Philadelphia, Pa., May 29th, 30th, and 31st, 1911. Price not stated.

ANIMAL DEFENCE AND ANTI-VIVISECTION SOCIETY, 170, Piccadilly, London, W.

The Royal Commission on Vivisection. Evidence by Miss Lind-af-Hageby. Given on May 1st and June 5th, 1907. Price not stated.

BAILLIÈRE, TINDALL, AND COX, London.

The Treatment, Prevention, and Cure of Tuberculosis and Lupus with Allyl Sulphide. By William C. Minchin, M.D. Univ. Dublin. Price 3*s.* 6*d.* net.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.

Medical Gymnastics and Massage for the Treatment of Disease Deformity, and Injury. By Frederick F. Middleweek, L.R.C.P., L.R.C.S. Ed., Director of Mechano-Therapeutics and Massage, West-End Hospital for Nervous Diseases. With an Introduction by Dr. J. Arvedson, Stockholm. Price 2*s.* 6*d.* net.

CASSELL AND COMPANY, LIMITED, London, New York, Toronto, and Melbourne.

British Red Cross Society First-Aid Manual. No. 1. By James Cantlie, M.A., M.B., F.R.C.S., V.D., Hon. Surgeon-Colonel, R.A.M.C. (T.F.). Price 1s. net.

CHAMBERS, W. AND R., LIMITED, 38, Soho-square, London, W.; 339, High-street, Edinburgh.

Organic Chemistry. Entirely New Edition (November, 1911). Part I. and Part II. in one volume. By W. H. Perkin, Ph.D., Sc.D., LL.D., F.R.S., Professor of Chemistry, Victoria University, Manchester, and F. Stanley Kipping, Ph.D., Sc.D., F.R.S., Professor of Chemistry, University College, Nottingham. Price not stated.

CORAH, JOHN AND SON, Loughborough and London.

The National Insurance Act. By J. B. Pike, M.R.C.S. Eng., L.R.C.P. Ed., Honorary Surgeon, Loughborough General Hospital. Price 3d.

DORNAN, WILLIAM J., Philadelphia.

Transactions of the American Surgical Association. Volume the Twenty-ninth. Edited by Archibald Maclaren, M.D., Recorder of the Association. Price not stated.

GOVERNMENT PRINTING OFFICE, Washington.

Treasury Department. Public Health and Marine Hospital Service of the United States. Hygienic Laboratory Bulletin, No. 79. January, 1912. Digest of Comments on the Pharmacopœia of the United States of America (Eighth decennial revision), and on the National Formulary (Third Edition). For the Calendar Year ending Dec. 31st, 1909. By Murray Galt Motter and Martin I. Wilbert. Price not stated.

HEINEMANN, WILLIAM, 21, Bedford-street, London, W.C.

Microbes and Toxins. By Dr. Etienne Burnet, of the Pasteur Institute of Paris. With a Preface by Élie Metchnikoff Translated from the French by Dr. Charles Broquet and W. M. Scott, M.D. Price 5s. net.

HODGE, WILLIAM, AND COMPANY, 12, Bank-street, Edinburgh.

Trial of William Palmer. Edited by George H. Knott, Barrister-at-Law. Price 5s. net.

JOURNAL OF NERVOUS AND MENTAL DISEASE PUBLISHING COMPANY, THE, 64, West 56th Street, New York.

Nervous and Mental Disease Monograph Series No. 9. Studies in Psychiatry. Vol. I. By Members of the New York Psychiatrical Society. Price $2.00.

Nervous and Mental Disease Monograph Series No. 10. Handbook of Mental Examination Methods. By Shepherd Ivory Franz, Ph.D., Scientific Director and Psychologist, Government Hospital for the Insane, Professor of Physiology, George Washington University. Price $2.00.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

Motive Force and Motivation-Tracks. A Research in Will Psychology. By E. Boyd Barrett, S.J., Doctor of Philosophy, Superior Institute, Louvain; Honours Graduate, National University, Ireland. Price, paper, 6s. net.; cloth, 7s. 6d. net.

PUTNAM'S SONS (G. P.), New York and London.

The Way with the Nerves. Letters to a Neurologist on Various Modern Nervous Ailments, Real and Fancied, with Replies thereto telling of their Nature and Treatment. By Joseph Collins, Physician to the Neurological Institute of New York. Price 6s. net.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, London, S.W.

List of the Fellows, Members, Extra-Licentiates, and Licentiates of the Royal College of Physicians of London, and of the Holders of the Diploma in Public Health, granted jointly by the Royal Colleges of Physicians and Surgeons. MCMXII. Price not stated.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.

Diseases of the Skin and the Eruptive Fevers. By Jay Frank Schamberg, A.B., M.D., Professor of Dermatology and Infectious Eruptive Diseases in the Philadelphia Polyclinic and College for Graduates in Medicine. Second edition, thoroughly revised. Price, cloth, 13s. net.

Principles and Practice of Physical Diagnosis. By John C. Da Costa, jun., M.D., Assistant Professor of Clinical Medicine, Jefferson Medical College. Second edition, thoroughly revised. Price, cloth, 15s. net.

Clinical Diagnosis. A Manual of Laboratory Methods. By James Campbell Todd, Ph.B., M.D., Professor of Pathology, University of Colorado. Second edition, revised and enlarged. Price, cloth, 10s. 6d. net.

SMITH, ELDER, AND CO., 15, Waterloo-place, London.

Saint Bartholomew's Hospital Reports. Edited by H. Morley Fletcher, M.D., and W. McAdam Eccles, M.S., F.R.C.S. Vol. XLVII. Price 6s. or 8s. 6d. (according to date of payment).

SPOTTISWOODE AND CO., LIMITED, 5, New Street-square, London,

Minutes of the General Medical Council and of its Various Committees for the Year 1911, with Thirty-six Appendices. Vol. XLVIII. 1912. Price not stated.

General Index to the Minutes of the General Medical Council, of its Executive and Dental Committees, and of its three Branch Councils. Volumes XL. to XLVIII. (1903-1911). Price not stated.

SWEET AND MAXWELL, LIMITED, 3, Chancery-lane, London, W.C.

A Manual of Public Health Law. By Bertram Jacobs, of the Inner Temple and South Wales Circuit, Barrister-at-Law. Price 7s. 6d.

WILLIAMS, J. W., London. (Agents:—SIMPKIN, MARSHALL, AND CO., LIMITED, London.)

New Light on Consumption. By Arthur Lovell, Author of "Ars Viven di," "Concentration," "Deep Breathing," &c. Price, library edition, 3s. 6d.; popular edition, 1s.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

CAMPBELL, D. B., M.B., Ch.B. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Saltcoats District of the county of Ayr.

CORKER, J., M.B., B.S. R.U.I., has been appointed Resident Medical Officer of the Dearnley Workhouse.

DOTT, A., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Gatehouse District of the county of Kirkcudbright.

MUSGROVE, C. D., M.D. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Penarth District of the county of Glamorgan.

MUSSON, A. W., M.B., B.C. Cantab., has been appointed Surgeon under the Factory and Workshop Acts for the Clitheroe District of the county of Lancs.

ROONEY, P. J., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Virginia District of the county of Cavan.

SHIPSEY, J., M.B., B.S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Schull District of the county of Cork.

VILVANDRÉ, G. E., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Staplehurst District of the county of Kent.

VINTER, S. G., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Torpoint District of the county of Cornwall.

WATSON, J. R., M.D. Edin., has been appointed Medical Officer to the Hamilton Parish Council.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN, KINGSEAT ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, &c.

AGRA, UNITED PROVINCES, INDIA, DUFFERIN HOSPITALS AND FEMALE MEDICAL SCHOOL.—Female Senior Doctor. Salary £26 13s. 4d. per mensem, with free quarters.

ALBERT DOCK HOSPITAL, Connaught-road, E.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing. Also House Surgeon. Salary £50 per annum, with board, residence, and washing. Each for six months.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and attendance.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Second and Third House Surgeons. Salaries £80 and £75 per annum respectively, with board, rooms, and laundry.

BIRMINGHAM CITY EDUCATION COMMITTEE.—Ophthalmic Surgeon. Salary £200 per annum.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100 per annum.

BRISTOL EYE HOSPITAL.—House Surgeon. Salary £80 per annum, with board and residence.

BURNLEY UNION WORKHOUSE.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, rations, washing, and attendance.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and laundry

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Pathologist. Salary at rate of £250 per annum.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—House Surgeon for six months. Salary £70 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CLIFTON, YORK, NORTH RIDING ASYLUM.—Second Assistant Medical Officer. Salary £150 per annum, with board, apartments, washing, and attendance.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £90 per annum, with rooms, board, washing, and attendance.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £120 per annum, with board, lodging, and laundry.

DEWSBURY AND DISTRICT GENERAL INFIRMARY.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

DREADNOUGHT HOSPITAL, Greenwich.—Two House Physicians and Two House Surgeons, each for six months. Salary £50 per annum, with board, residence, and washing. Also Medical Registrar.

DUBLIN, ROYAL VICTORIA EYE AND EAR HOSPITAL, Adelaide-road.—House Surgeon. Salary £40 per annum, with board and residence.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, attendance, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—House Physician. Salary at rate of £75 per annum, with board, residence, and washing. Also Clinical Assistants.

HEMEL HEMPSTEAD, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

HUNTINGDON COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, and all found.

JERSEY POOR-HOUSE AND INFIRMARY (HÔPITAL-GÉNÉRAL).—Medical Officer. Salary £250 per annum.

KENSINGTON AND FULHAM GENERAL HOSPITAL, Earl's Court, S.W.—Surgeon.

LEICESTER INFIRMARY.—Honorary Physician.

LONDON COUNTY ASYLUM, Cane Hill, Coulsdon, Surrey.—Junior Assistant Medical Officer, unmarried. Salary £170 per annum, with board, apartments, and washing.

LONDON HOSPITAL, Whitechapel, E.—Registrar and Demonstrator in the Aural Department. Salary £100 per annum. Also Junior Dental House Surgeon. Salary £50 per annum.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £120 per annum, with rooms, attendance, board, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board and residence.

MANCHESTER ROYAL INFIRMARY.—Junior House Surgeon, unmarried, for six months. Board and residence provided.

MERTHYR TYDFIL UNION WORKHOUSE.—Assistant Medical Officer. Salary £150 per annum, with apartments, rations, laundry, and attendance.

NORTH SHIELDS, TYNEMOUTH UNION WORKHOUSE, Preston-road.—Medical Officer. Salary £340 per annum.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Casualty Officer, unmarried, for six months. Salary £60 per annum, with board, lodging, and washing.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, &c.

PRESTON ROYAL INFIRMARY.—Senior and Junior House Surgeons, unmarried, for six months. Salaries £80 and £60 per annum respectively, with board, residence, and washing.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Physician to Out-patients.

READING, ROYAL BERKSHIRE HOSPITAL.—House Physician, House Surgeon, and Second House Surgeon for six months. Salary in each case £80 per annum, with board, lodging, and washing.

ROYAL EAR HOSPITAL, Soho.—House Surgeon, non-resident. Salary £40 per annum.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Assistant Anæsthetist. Salary £50 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London, E.C.—House Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing.

ST. BARTHOLOMEW'S HOSPITAL.—Surgeon.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon, for six months. Salary at rate of £65 per annum, with board and residence.

SHEFFIELD ROYAL HOSPITAL.—Sixth Resident, unmarried. Salary £60 per annum, with board, lodging, and washing.

SHEFFIELD ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary £80 per annum.

SHEFFIELD UNIVERSITY.—Demonstrator in Experimental Physiology. Salary £200 per annum.

SHREWSBURY, SALOP INFIRMARY (COUNTY HOSPITAL).—House Physician. Salary at rate of £70 per annum, with board and apartments.

SINGAPORE MUNICIPALITY INFECTIOUS DISEASES HOSPITAL, STRAITS SETTLEMENTS.—Resident Medical Officer. Salary £400 per annum, with free quarters.

SLEAFORD, LINCOLNSHIRE, KESTEVEN COUNTY ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, &c.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—House Physician. Salary £82 per annum, with board, residence, and laundry.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

SUNDERLAND CHILDREN'S HOSPITAL.—Resident Medical Officer for six months. Salary £90 per annum, with board, residence, and laundry.

SUNDERLAND ROYAL INFIRMARY.—Two Junior House Surgeons and House Physician for six months. Salary £80 per annum in each case, with board, residence, and laundry.

TEIGNMOUTH HOSPITAL, S. DEVON.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

WALSALL AND DISTRICT HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, residence, and laundry.

WESTERN GENERAL INFIRMARY, Marylebone-road, N.W.—Honorary Physician.

WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith-road, W.—Clinical Assistants. Also Three Non-resident Assistant House Surgeons. Each for three months.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Surgical Officer. Salary £125 per annum, with board, apartments, and laundry. Also Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Wolston, in the county of Warwick; and at Conway, in the county of Carnarvon.

Births, Marriages, and Deaths.

BIRTHS.

THOMAS.—On March 15th, at Colston-parade, Redcliffe, Bristol, the wife of J. M. M. Thomas, M.R.C.S., L.R.C.P., of a son.

YOUNG.—On March 13th, at Stoney Stanton, Leicestershire, the wife of Graham Pallister Young, M.B., B.S. Lond., M.R.C.S., L.R.C.P., of a daughter.

DEATHS.

CLARKE.—On March 11th, at Rockleigh, Whiteladies-road, Clifton, Bristol, William Thomas Clarke, M.R.C.S., L.R.C.P., eldest son of T. W. Clarke.

RYMER.—On Jan. 11th, at Fort Resolution, Great Slave Lake, N.W.T., Canada, James Francis Rymer, M.R.C.S., L.D.S., D.D.S., aged 48 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

INCOME-TAX AND THE MEDICAL PROFESSION.

A CORRESPONDENT writes:—"I should be very much obliged for information on the following point regarding income-tax. In calculating the net income for taxation, is it permitted to deduct from the gross receipts of a practice fees paid to a locum tenens? My partner and I furnish the surveyor of taxes, at his request, with a statement at the beginning of each year of our gross income and a detailed account of our practice expenses. In former years we have always been allowed to include locum fees in practice expenses. This year the surveyor informs us that we cannot do so, and quotes a recent legal judgment to show he is right. I enclose a copy of his letter." The surveyor in his letter says: "The locum fees have been added back because they are not considered as being necessary expenses. There is no provision for the allowance of any sum paid to another man to do part of the work of the profession—in fact, it was decided in the case of Lothian *v.* Macrae that should such allowances be claimed they were not admissible as income-tax deductions." We do not know the circumstances of the case referred to by the surveyor, but our opinion is that our correspondent is justified in deducting the cost of an assistant or locum-tenent; we consider that he should appeal to the Commissioners if the surveyor insists on his view. Such deductions have always been allowed in the past, and this particular deduction was given in the model form of return published in THE LANCET of July 4th, 1896 (now out of print), which was based on an actual return produced to the Commissioners and allowed by them. We do not know what distinction (if any) is here attempted to be drawn between an "assistant" and a "locum-tenent"; but to say that the fees of the latter "are not considered as being necessary expenses" appear to suggest that a medical man may not deduct his assistant's salary.

To the Editor of THE LANCET.

SIR,—Claims for repayment of income-tax for the year ended April 5th, 1909, must be lodged before April 5th next (Good Friday), otherwise the right to claim for that year will be lost, as the Inland Revenue authorities will not extend the time under any circumstances.

Yours faithfully,

THE INCOME-TAX ADJUSTMENT AGENCY, LIMITED,
E. MONTAGUE, Secretary.

9, 10, and 11, Poultry, Cheapside, E.C., March 20th, 1912.

AN INTERESTING FACT.

To the Editor of THE LANCET.

SIR,—On Sept. 13th, 1882, I removed an ovarian cyst from a woman aged 61. The case was reported in THE LANCET, Feb. 17th, 1883. It may interest your readers to know that the patient celebrated her ninetieth birthday on Nov. 4th, 1911, and is still alive and in possession of all her faculties. The case is uncommon and may be worth recording.

I am, Sir, yours faithfully,

A. C. BUTLER-SMYTHE, F.R.C.S. Edin.

Brook-street, W., March 12th, 1912.

DOMESTIC ECONOMY FOR HOUSEWIVES.

THE Woman's Industrial Council, of 7, John-street Adelphi, W.C., is issuing a series of penny handbooks (by post 1½*d.*) in illustration of domestic difficulties. We have before us five such pamphlets by Marguerite Fedden, which should prove eminently useful to those who really desire to acquire training in methodical house work, and it is only by method that good results can be looked for. "How to Cook a Simple Meal" gives some preliminary instruction on the underlying principles of cooking, followed by detailed accounts how to proceed step by step in preparing all kinds of dishes. "How to Clean a House" is equally precise and orderly in its directions. The same remarks apply to "How to do the Weekly Mending," "How to do the Weekly Wash," and "How to do your own Upholstery and Machining."

If to these be added the "Home Handbook, Health and Hygiene" (London: The Incorporated Institute of Hygiene. Pp. 82. Price 3*d.*), which expounds the basic principles of health and hygiene in relation to diet, clothing, personal hygiene, the rearing of children, nursing, sanitation of the house, nursery, and bedroom, disposal of refuse, and prevention of fire, even the poorest will possess a library of useful information on domestic economy that, if properly studied, will enable them to become proficient in household management.

"606" IN BILHARZIOSIS.

To the Editor of THE LANCET.

SIR,—I should be glad if any of your Cairo correspondents would kindly say what benefit, if any, has been derived from the venous injection of "606" in cases of bilharziosis.

I am, Sir, yours faithfully,

"PERPLEXED."

THE CAUSES OF A MEDICAL PRACTITIONER'S BANKRUPTCY.

Mr. A. C. B. Jones, a medical man practising at Chatham, presented himself recently for public examination as a bankrupt at the court at Rochester, and in explaining the causes of his insolvency made the following statement: His assets stated on paper showed a surplus over his liabilities of £60, but this was on the assumption that the value of his practice was correctly represented at the sum of £400. He was of the opinion that at that figure it could have been disposed of but for the intervention of the National Insurance Act, the introduction of which in Parliament and its passing had rendered the sale of practices of this class a matter of extreme difficulty. He had been informed by the agent to whom he had entrusted it that the effect of the Act had been such as practically to put an end to sales, so that he had not sold one for a year. A further cause of the debtor's position was to be found in the Midwives Act, which had diminished his former income by £150 per annum. According to his experience many ladies preferred employing midwives to medical men since the status of the midwife had been raised. Mr. Jones was allowed to pass his examination. His story is not one to encourage those who contemplate entering the medical profession, and it is for the serious consideration of legislators that in this concrete instance serious financial loss to a medical practitioner should be directly traceable to the effect of two benevolently intended Acts of Parliament. That Parliament should legislate in the interest of the public health is as it should be, but the public health is in the custody of the medical profession, and it can be of no benefit to the public so to lower the possible emoluments of everyday professional practice that young men of good ability are driven to enter upon other pursuits, leaving their intellectual inferiors to fill places which should be theirs.

VENERABLE VERITIES.

To the Editor of THE LANCET.

SIR,—Some time ago there was some controversy in the medical press as to certain well-known verses, of Hudibrasian flavour, which, writing only from my memory of them, were:—

> The devil was sick, the devil a saint would be;
> The devil was well, the devil a saint was he.

And—

> When we are ill, but not before,
> God and the doctor we adore.
> When we get well, both are requited;
> God is forgotten, the doctor "slighted."

Is it well known that the idea of these verses—so true, alas! to our edical experience—may be found in Rabelais, who gives in his "Pantagruel," as a "proverbe lombardique," the Italian verse:—

> Passato el pericolo, gabbato el santo.
> (Le danger passé, est le saint moqué.)

I am, Sir, yours faithfully,

Birmingham, March 1st, 1912. JAMES SAWYER.

"Rus" inquires: What is the best method of treating the papered walls of rooms in which illness or deaths have occurred in such cases as death from bronchitis, cancer, or a disease not usually attributed to a micro-organism? Must sulphur or formalin be used? Or is there any dry method or wet method by spraying or washing of the paper which can be used, whereby the paper of the walls can be allowed to remain and by which no repapering will probably be rendered necessary?

*** The usual procedure recommended by health officials and sanitary officers is that the room should be emptied of all furniture, that this and the room should be thoroughly scrubbed, and that the walls should be rubbed down with dough and sprayed with formalin.—ED. L.

W. B. F.—In a hospital which possesses two resident medical officers and a resident dispenser it is neither customary nor desirable that the matron or any other unqualified person should have charge of the dispensary keys.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1912:—

March 23rd–April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.
April 1st and 2nd (Milan).—Italian National Convention upon the Sexual Question.
" (London).—First Congress of Pure Food and Health Society of Great Britain.
" 1st–7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.
" 8th–13th (Rome).—Seventh International Congress of Dermatology and Syphilology.
" 8th–15th (Johannesburg).—Thirteenth South African Medical Congress.
" 9th–11th (Paris).—Congress of Physiotherapy for French-speaking Physicians.
April 9th (Berlin).—Eleventh Congress of the German Society for Orthopædic Surgery.
" 9th–13th (Giessen).—Congress on Study of Families, Inheritance, and Race Hygiene.
" 10th–13th (Berlin).—Forty-first Congress of the German Surgical Society.
" 12th–30th (London, Olympia).—Ideal Homes Exhibition.
" 14th (Berlin).—Eighth Congress of the German Röntgen Society.
" 14th–20th (Rome).—Seventh International Congress on Tuberculosis.
" 15th–18th (Wiesbaden).—Twenty-ninth German Congress for Internal Medicine.
" 21st–24th (Munich).—Twenty-sixth Meeting of the Anatomical Society.
May 7th–17th (Washington).—Ninth International Red Cross Conference.
" 13th (London, Guildhall).—Conference on Diet in Schools.
" 23rd (opens) (Philadelphia).—Twelfth International Congress on Navigation.
" 23rd–25th (Hanover).—Nineteenth Meeting of the Union of German Laryngologists.
" 25th–27th (Paris).—International Musical Festival.
" 25th–28th (Paris).—National Conference of the "Gouttes de Lait."
Whitsuntide (Portrush).—British Esperanto Congress
May 27th–June 1st (London).—Eighteenth International Congress of Americanists.
" 29th–31st (Berlin).—Fifteenth Session of the German Society for Gynæcology.
" (London).—International Horticultural Exhibition.
May to October (London, Earl's Court).—Shakespeare's England.
June 11th–14th (Caxton Hall, Westminster).—Second National Conference on the Prevention of Destitution.
" 24th–27th (London).—The (Biennial) Health Conference and Exhibition.
" (London).—Missionary Exhibition.
" (Atlantic City, N.J.).—Annual Meeting of the American Medical Association.
" (Birmingham).—Tuberculosis Exhibition.
" (London, Science Museum, South Kensington).—Second Optical Convention.
July 2nd–5th (London).—Congress of the Universities of the Empire.
" 2nd–6th (Doncaster).—Seventy-third Annual Show of the Royal Agricultural Society of England.
" 4th–6th (Dublin).—Celebration of the Bicentenary of the School of Physic in Ireland (Medical School of Trinity College, Dublin).
" 12th–16th (London).—Imperial Conference of Teachers' Associations.
" 17th–19th (Oxford).—Oxford Ophthalmological Congress.
" 19th–27th (Liverpool).—British Medical Association, Eightieth Annual Meeting.
" 24th–30th (University of London).—First International Eugenic Congress.
" 25th–28th (Berlin).—Royal Institute of Public Health.
" 29th–August 3rd (York).—Congress and Exhibition of the Royal Sanitary Institute.
Aug. 5th–10th (Oxford).—Second International Congress of Entomology.
" 7th–10th (Glasgow University).—Thirty-second Annual Meeting of the British Dental Association.
" 10th–Sept. 6th (Balkans, Turkey, Greece).—Ninth Annual Congress of the Association Internationale de Perfectionnement Scientifique (A.P.M.).
" 12th–17th (Boston, U.S.A.).—Ninth International Otological Congress.
" (end) (Cracow).—International Esperanto Congress.
Sept. 4th (Washington, D.C.) and Sept. 6th–13th (New York).—Eighth International Congress of Applied Chemistry.
" 4th (opens) (Dundee).—British Association.
" 9th–10th (San Sebastian).—Third Spanish Congress of Tuberculosis.
" 10th–12th (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
" 23rd–28th (Washington, D.C.).—Fifteenth International Congress on Hygiene and Demography.
" 27th–29th (Hamburg).—Sixth Annual Meeting of the German Society of Specialists in Nerve Diseases.
" (Prague).—International Congress of Radiology and Medical Electrology.
Oct. 9th–12th (New York).—Electrical Exposition and Automobile Show.
" 13th–16th (Paris).—Thirteenth French Congress of Medicine.
(Budapest).—Tuberculosis Exhibition.
(Stockholm).—Olympic Games.
(Düsseldorf).—Third International Medical Accident Congress.
(Perth, Western Australia).—(Three days.) Health Congress.
(Edmonton).—Annual Meeting of the Canadian Medical Association.
In 1913:—
(Easter week) (Berlin).—Fourth International Congress for Physiotherapy.
Aug. 6th–12th.—(London).—Seventeenth International Congress of Medicine.
" 22nd–28th (Cambridge).—International Mathematical Congress.
(London).—Historical Medical Exhibition. (Organised by Mr. Henry S. Wellcome.)
(Chicago).—Congress of the International Association of Refrigeration.

(Washington).—Congress of American Physicians and Surgeons.
(Paris).—Congress of Physical Education.
(Milan).—Fourteenth International Anti-alcoholic Congress.
(Buffalo).—Fourth International Congress of School Hygiene.

In 1914:—
(Vienna).—Third International Congress for Professional Diseases.
(Auckland, N.Z.).—Australasian Medical Congress.
(St. Petersburg).—Third Mendeléeff Congress of Pure and Applied Chemistry and Physics.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Dr. G. J. Burch: A Confusion Test for Colour Blindness.—Mr. C. Dobell: On the Systematic Position of the Spirochætæ (communicated by Prof. A. Sedgwick).—Mr. E. C. Snow: The Influence of Selection and Assortative Mating on the Ancestral and Fraternal Correlations of a Mendelian Population (communicated by Prof. Karl Pearson).—Mr. T. Lewis and Mr. M. D. D. Gilder: The Human Electrocardiogram: a Preliminary Investigation of Young Male Adults to Form a Basis for Pathological Study (communicated by Sir J. R. Bradford, K.C.M.G., secretary of the Royal Society).—Mr. C. Revis: The Production of Variation in the Physiological Activity in B. Coli by the Use of Malachite-green (communicated by Sir J. R. Bradford, K.C.M.G.).—Muriel Robertson: Notes on Some Flagellate Infections Found in Certain Hemiptera in Uganda (communicated by Sir J. R. Bradford, K.C.M.G.).—Muriel Robertson: Notes on Certain Aspects of the Development of T. Gambiensi in Glossina Palpalis (communicated by Sir J. R. Bradford, K.C.M.G.).—Dr. H. L. Duke: Antelopes and their Relation to Trypanosomiasis (communicated by Sir J. R. Bradford, K.C.M.G.).

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

MONDAY.
ODONTOLOGICAL SECTION (Hon. Secretaries—W. W. James, Stanley Mummery): at 8 P.M.

Paper:
Mr. Douglas Gabell: The Position of Swivels on Spring Dentures.

Casual Communications:
Mr. E. B. Dowsett: Case of General Exostosis of all the Maxillary Teeth.
Mr. T. Campbell Dykes: Models showing Variation in Number, Size, and Position of Teeth—Incisors and Canines.

TUESDAY.
MEDICAL SECTION (Hon. Secretaries—Sir John F. H. Broadbent, Bt., Robert Hutchison): at 5.30 P.M.

Papers:
Sir Lauder Brunton, Bt., F.R.S.: Abdominal Angina.
Dr. Hertz: Functional Hour-glass Stomach.

FRIDAY.
LARYNGOLOGICAL SECTION (Hon. Secretaries—W. H. Kelson, Dan McKenzie), at 11, Chandos-street, W.: at 4.30 P.M.

Cases and Specimens
Will be shown by Dr. Peters, Dr. Irwin Moore, Dr. Brown Kelly, Mr. Stuart-Low, Dr. Kelson, Mr. Waggett, Dr. E. D. Davis, and others.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8 P.M., Clinical Evening. Cases will be exhibited by Dr. P. Weber, Mr. A. E. Barker, Dr. de Havilland Hall, Mr. A. Lane, Mr. Barrington-Ward, Dr. E. Wynter, Mr. H. J. Curtis, Dr. W. Branson, Dr. F. S. Palmer, and others.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—9 P.M., Discussion on the Therapeutic Value of Alcohol, to be opened by Sir Victor Horsley, followed by Dr. F. J. Smith, Prof. A. R. Cushny, Mr. M. C. Corner, Dr. J. L. Hewer, and others. (Lantern slide illustrations.)

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8.30 P.M., Dr. C. Shaw: The Material Obligations of Spiritualism and Allied Phenomena. (Harveian Lecture.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY.—5 P.M., Dr. E. Fawcett: The Development of the Human Chondro-cranium and Various Cranial Bones.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. W. Fox: Clinique (Skin). 5.15 P.M., Lecture:—Dr. T. D. Lister: Some Clinical Difficulties in Sanatorium Insurance.
TUESDAY.—4 P.M., Dr. J. Parkinson: Clinique (Medical). 5.15 P.M., Dr. J. S. R. Russell: Myelitis and its Treatment (with lantern demonstration).
WEDNESDAY.—4 P.M., Mr. C. Ryall: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. A. E. Giles: Pernicious Effects of Uterine Fibroids.
THURSDAY.—4 P.M., Dr. D. W. Carmalt-Jones: Clinique (Medical). 5.15 P.M., Lecture:—Mr. Clayton-Greene: Some Bacterial Infections of the Urinary Tract.
FRIDAY.—4 P.M., Dr. G. Thompson: Clinique (Eye). 5.15 P.M., Lecture:—Dr. W. Wingrave: Some Points in the Pathology of Sputum.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. R. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).
TUESDAY.—Clinic: 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld).; Surgical (Mr. Howell Evans); Gynæcological (Dr. A. H. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Mr. H. Evans: Varicose Veins and Varicose Ulcers.
WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen): Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. H. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).
FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. R. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 3.15 P.M., Special Lecture:—Sir Dyce Duckworth: The Varieties and Significance of Cough.
TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Mr. Gray: Some Points in the Relationship of the Nervous System to the Surgery of the Peritoneum.

LISTER INSTITUTE OF PREVENTIVE MEDICINE, Lecture Theatre of the Lister Institute, Chelsea Bridge-road, S.W.

TUESDAY.—5 P.M., Dr. W. Nicoll: Modern Aspects of Helminthology—Special Features of the Trematode Parasites of Man. (Lecture III.)
FRIDAY.—5 P.M., Dr. W. Nicoll: Modern Aspects of Helminthology—Special Features of the Cestode Parasites of Man. (Lecture IV.)

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

THURSDAY.—3 P.M., Dr. F. A. Dixey: Sexual Dimorphism in Butterflies.
FRIDAY.—9 P.M., Prof. Sir J. J. Thomson: Results of the Application of Positive Rays to the Study of Chemical Problems.
SATURDAY.—3 P.M., Prof. Sir J. J. Thomson: Molecular Physics (Lecture VI.)

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., A Demonstration of Medical and Surgical Cases will be given by Members of the Honorary Staff. (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.

TUESDAY.—4.30 P.M., Dr. Murray: The Clinical Significance of Hæmorrhage as an Early Sign of Disease. (Post-Graduate Clinic.)

SALFORD ROYAL HOSPITAL.

THURSDAY.—4.30 P.M., Mr. R. Ollerenshaw: Some Common Deformities and their Treatment. (Post-Graduate Course).

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (27th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (28th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (30th).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1911 were given in THE LANCET of Dec. 30th, 1911.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 20th, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 14	30·04	S.W.	0·02	83	59	48	50	51	Overcast
,, 15	29·76	S.W.	0·01	62	51	48	48	50	Cloudy
,, 16	29·86	W.	0·11	90	52	37	38	39	Fine
,, 17	29·50	S.W.	0·03	58	46	39	40	41	Cloudy
,, 18	29·97	S.	0·17	57	48	39	42	43	Cloudy
,, 19	29·11	S.W.	0·11	80	50	39	41	42	Raining
,, 20	29·43	W.	0·10	92	49	37	38	40	Fine

The following journals, magazines, &c., have been received:—L'Hygiène, Paper (New York), Local Government Review, Revue de Chirurgie, British Journal of Children's Diseases, Revue de Médecine, Archives of Pediatrics, Birmingham Medical Review, Albany Medical Annals, Medical Review of Reviews, Therapist, Symon's Meteorological Magazine, Tropical Medicine and Hygiene, Archiv für Experimentelle Pathologie und Pharmakologie, Medical Chronicle, Bristol Medico-Chirurgical Journal, American Medicine, Pacific Medical Journal, American Journal of Obstetrics.

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